

ESF Series

Waterproof safety light curtain

ESF series is IP68 waterproof safety light curtain, can be used under water, and good performance to against light and electromagnetic interference. Low power consumption design, quick response and precise resolution ensure security.



Product feature

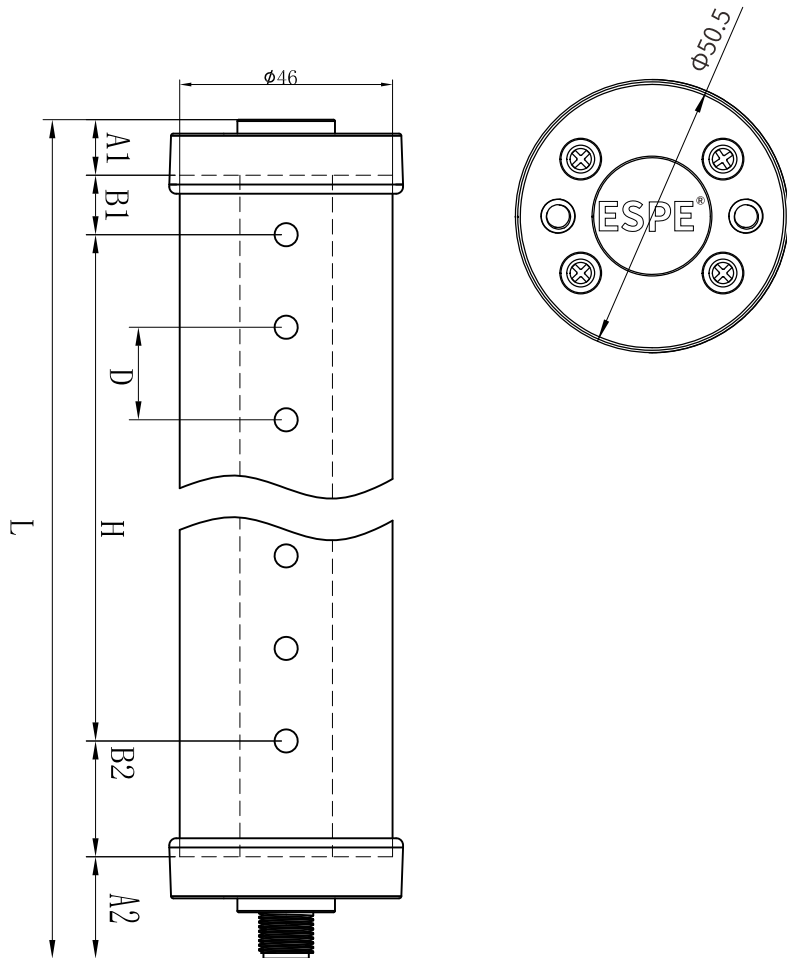
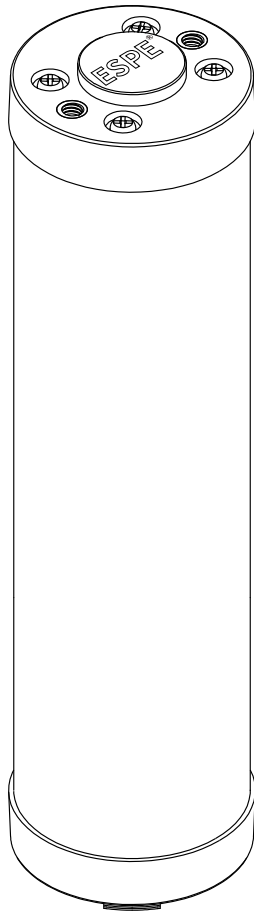
- IP68 protection rating
- Sensing distance underwater can be up to 5 meters.
- Dual loop & self-inspection design ensure high safety protection
- Quick response time less than 1ms
- Low wide voltage DC10V-30V
- Great ability to against interference of electromagnetic by motor of different machine
- Wire synchronization against interference of light
- Multiple brackets support different installation according to various machine.

Technical parameter

Parameter of safety light curtain	
Power supply	DC10V~30V
Capacity	<5W
Beam space	10mm, 20mm, 40mm
Resolution	20mm, 30mm, 50mm
Beams	10mm: 8, 12, 16.....144
	20mm: 4, 6, 8.....73
	40mm: 4, 6, 8.....36
Protective height	Protective height= (N-1)* beam space, N is beam quantity
Wave length	940nm
Response time	Response time = N*0.1ms + 0.4ms (N is beam quantity)
Type of output (OSSD)	PNP/NPN semiconductors, current <200mA, residual voltage: 1V max, (Except voltage influenced by lengthen wire) leakage current: 1mA max.
Protective circuit	Overvoltage protection, power supply reverse polarity protection, Overcurrent protection
Sensing distance	0.1~0.5m, 0.1~2m, 0.1~4m (remark: if have light reflection, please let us know)
Anti-optical interference	10000Lux(angle>5°)
Sensing method	Through-beam type
Synchronization	Wire synchronization
Enclosure material	Aluminum +PMMA
Enclosure rating	IP68
Housing cross-section	Φ46mm
Ambient operating temperature	-10°C~55°C (without freezing)
Storage temperature	-30°C~60°C (without freezing)
Ambient operating humidity	Whentemperature is 20°C, humidity max 85%

Explanation of model number (For example: ESF1020NCC-2)

ESF	10	20	N	C	C	—	2
▼	▼	▼	▼	▼	▼		▼
Model	Beams	Beam space	Output signal	Output contact	Scanning method		Sensing distance
ESF series	04, 06, 08, 10, 12.....	10mm 20mm 40mm	N: NPN P: PNP	C : normally close	Parallel scanning C: cross scanning		0.5: 0.1~0.5M 2: 0.1~2M 4: 0.1~4M



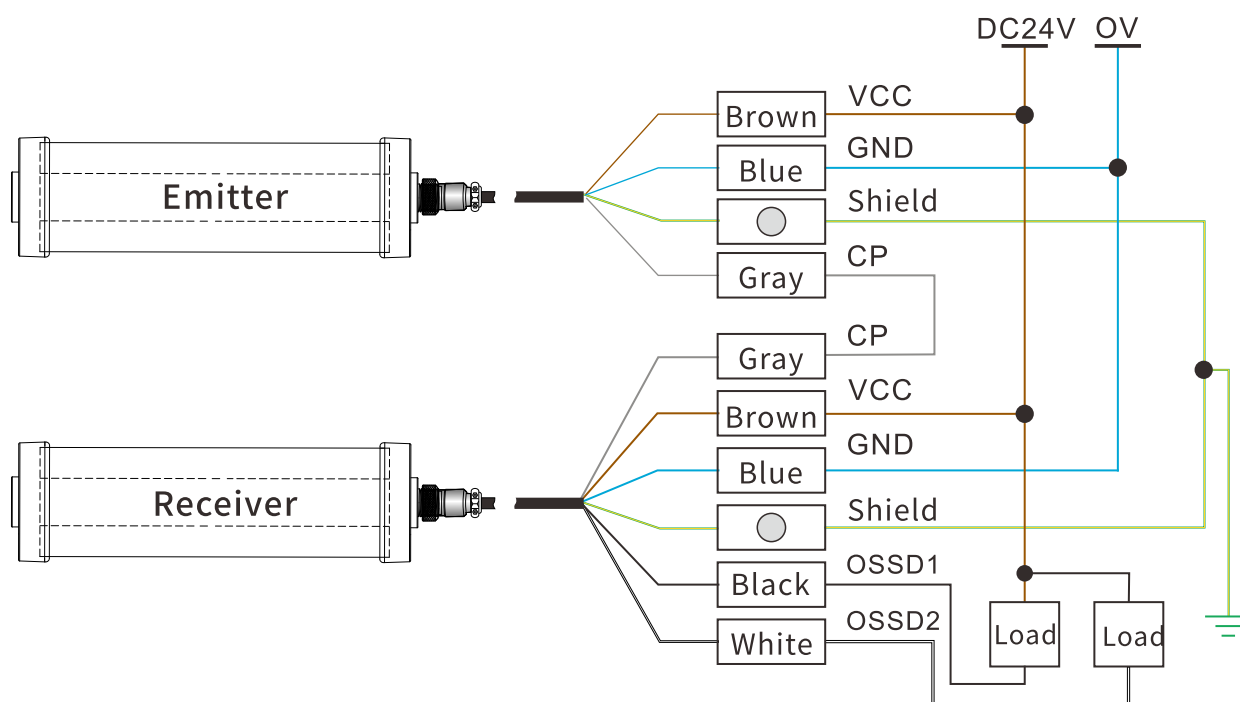
A1: Uppercover
 A2: Bottomcover + aviation cap
 B1: Upper stop-work range
 B2: Bottom stop-work range
 D: Beam space
 H: Protective height
 L: Total height

A1=12mm; A2=22mm
 When D=10mm, B1=5mm; B2=30mm
 When D=20mm, B1=10mm; B2=35mm
 When D=40mm, B1=10mm; B2=35mm
 H is protective height: $H = (\text{beams} - 1) * \text{beam space}$
 L is total height: $L = A1 + A2 + B1 + B2 + H$

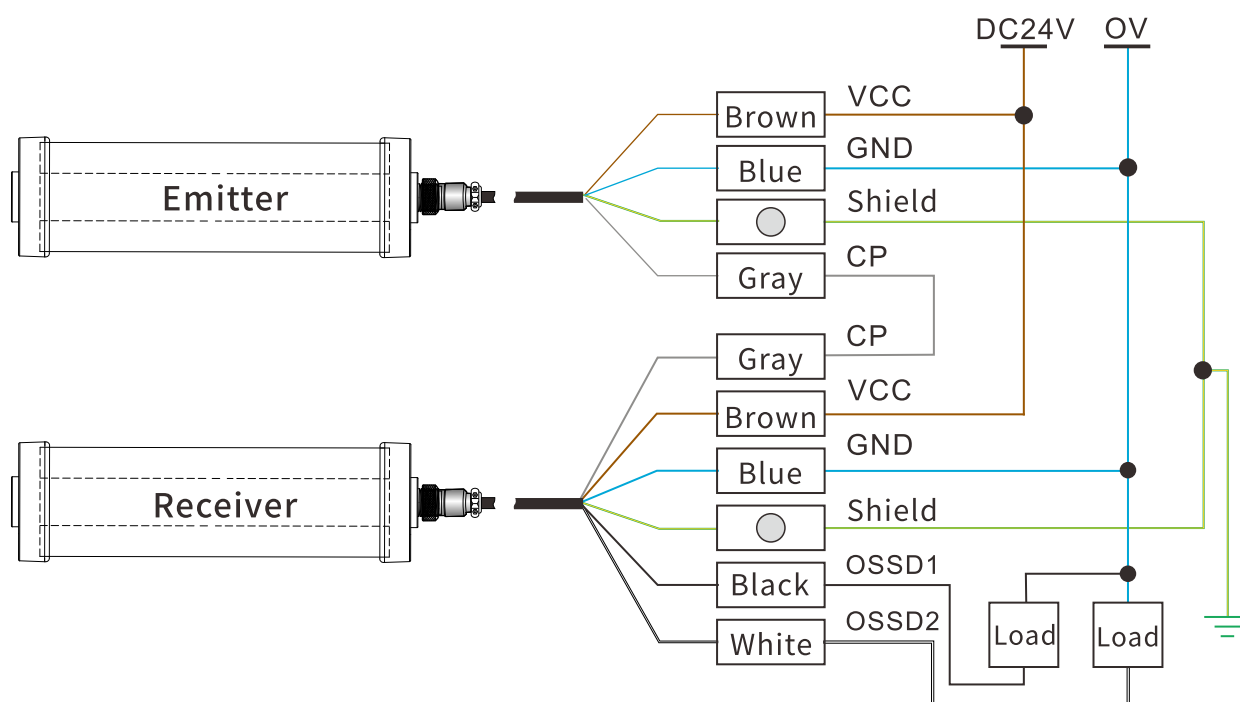
EFP Series
ESE Series
ESN Series
ESQC Series
ELG Series
EB13 Series
EB15 Series
ESA Series
ESP Series
EFB Series
ESF Series
ESCL Series
ESCF Series
ESCH Series
ESCC Series
ESR Series
EDL-R1 Series
EPL Series
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EDS-L Series
EMB-M01
F27X Series

Wire connection

NPN type



PNP type



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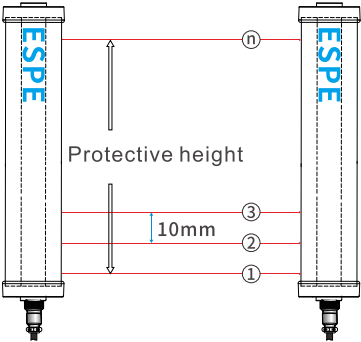
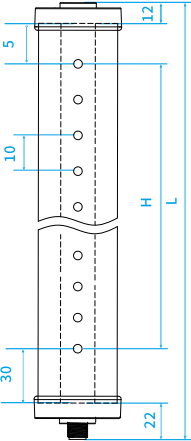
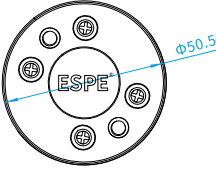
EDS-L Series

EMB-M01

F27X Series

ESF selection sheet

- Beam space is 10mm, resolution 20mm

Picture	Beams	Protective height(mm)	Total height (mm)	Model	Size L*W*H(mm)
	08	70	139	ESF0810	Φ50.5*139
	12	110	179	ESF1210	Φ50.5*179
	16	150	219	ESF1610	Φ50.5*219
	20	190	259	ESF2010	Φ50.5*259
	24	230	299	ESF2410	Φ50.5*299
	28	270	339	ESF2810	Φ50.5*339
	32	310	379	ESF3210	Φ50.5*379
	36	350	419	ESF3610	Φ50.5*419
	40	390	459	ESF4010	Φ50.5*459
H is protective height: $H = (\text{Beams} - 1) * \text{beam space}$ L is total height: $L = A1 + A2 + B1 + B2 + H$	44	430	499	ESF4410	Φ50.5*499
	48	470	539	ESF4810	Φ50.5*539
	52	510	579	ESF5210	Φ50.5*579
	56	550	619	ESF5610	Φ50.5*619
	60	590	659	ESF6010	Φ50.5*659
	64	630	699	ESF6410	Φ50.5*699
	68	670	739	ESF6810	Φ50.5*739
	72	710	779	ESF7210	Φ50.5*779
	76	750	819	ESF7610	Φ50.5*819
	80	790	859	ESF8010	Φ50.5*859
	84	830	899	ESF8410	Φ50.5*899
	88	870	939	ESF8810	Φ50.5*939
	92	910	979	ESF9210	Φ50.5*979
	96	950	1019	ESF9610	Φ50.5*1019
	100	990	1059	ESF10010	Φ50.5*1059
	104	1030	1099	ESF10410	Φ50.5*1099
	108	1070	1139	ESF10810	Φ50.5*1139
	112	1110	1179	ESF11210	Φ50.5*1179
	116	1150	1219	ESF11610	Φ50.5*1219
	120	1190	1259	ESF12010	Φ50.5*1259
	124	1230	1299	ESF12410	Φ50.5*1299
	128	1270	1339	ESF12810	Φ50.5*1339
					
	144	1430	1499	ESF14410	Φ50.5*1499

Besides of above model, we can customize according to your request.

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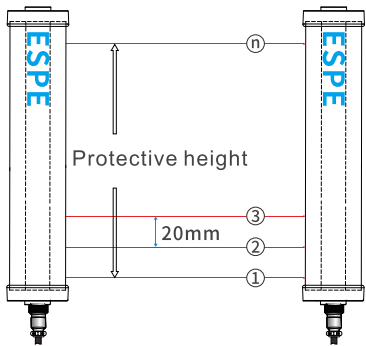
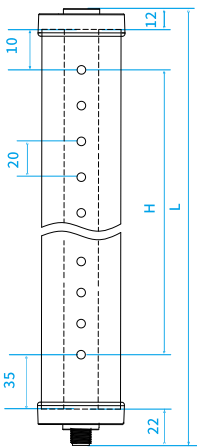
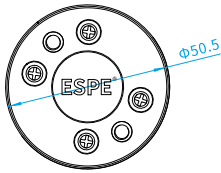
EDS-L Series

EMB-M01

F27X Series

ESF selection sheet

- Beam space is 20mm, resolution 30mm

Picture	Beams	Protective height(mm)	Total height (mm)	Model	Size L*W*H(mm)
	06	100	179	ESF0620	Φ50.5*179
	08	140	219	ESF0820	Φ50.5*219
	10	180	259	ESF1020	Φ50.5*259
	12	220	299	ESF1220	Φ50.5*299
	14	260	339	ESF1420	Φ50.5*339
	16	300	379	ESF1620	Φ50.5*379
	18	340	419	ESF1820	Φ50.5*419
	20	380	459	ESF2020	Φ50.5*459
	22	420	499	ESF2220	Φ50.5*499
	24	460	539	ESF2420	Φ50.5*539
	26	500	579	ESF2620	Φ50.5*579
	28	540	619	ESF2820	Φ50.5*619
	30	580	659	ESF3020	Φ50.5*659
	32	620	699	ESF3220	Φ50.5*699
	34	660	739	ESF3420	Φ50.5*739
	36	700	779	ESF3620	Φ50.5*779
	38	740	819	ESF3820	Φ50.5*819
	40	780	859	ESF4020	Φ50.5*859
	42	820	899	ESF4220	Φ50.5*899
	44	860	939	ESF4420	Φ50.5*939
	46	900	979	ESF4620	Φ50.5*979
	48	940	1019	ESF4820	Φ50.5*1019
	50	980	1059	ESF5020	Φ50.5*1059
	52	1020	1099	ESF5220	Φ50.5*1099
	54	1060	1139	ESF5420	Φ50.5*1139
	56	1100	1179	ESF5620	Φ50.5*1179
	58	1140	1219	ESF5820	Φ50.5*1219
	60	1180	1259	ESF6020	Φ50.5*1259
	62	1220	1299	ESF6220	Φ50.5*1299
	64	1260	1339	ESF6420	Φ50.5*1339
	66	1300	1379	ESF6620	Φ50.5*1379
					
	72	1420	1494	ESF7220	Φ50.5*1494

H is protective height:

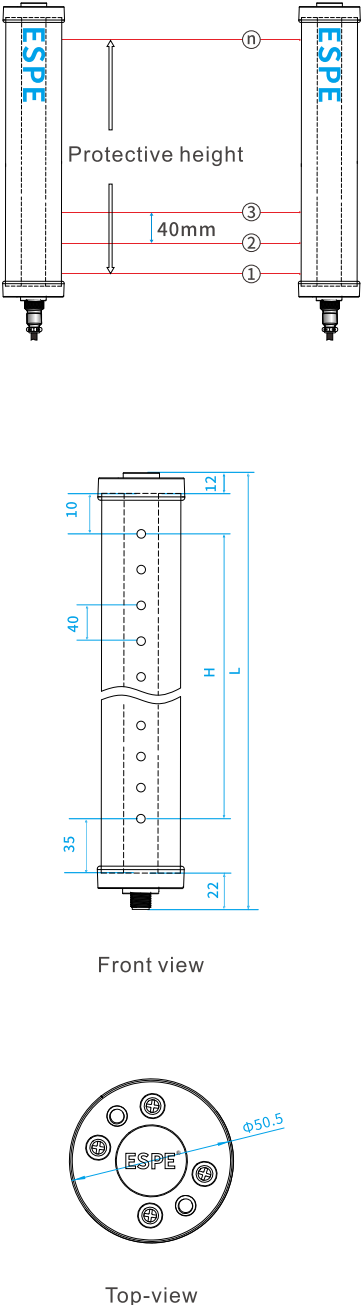
$H = (\text{Beams} - 1) * \text{beam space}$

L is total height: $L = A1 + A2 + B1 + B2 + H$

Besides of above model, we can customize according to your request.

ESF selection sheet

● Beam space is 40mm, resolution 50mm

Picture	Beams	Protective height(mm)	Total height (mm)	Model	Size L*W*H(mm)
 Protective height 40mm Front view Top-view H is protective height: $H = (\text{Beams} - 1) * \text{beam space}$ L is total height: $L = A1 + A2 + B1 + B2 + H$	04	120	199	ESF0440	Φ50.5*199
	06	200	279	ESF0640	Φ50.5*279
	08	280	359	ESF0840	Φ50.5*359
	10	360	439	ESF1040	Φ50.5*439
	12	440	519	ESF1240	Φ50.5*519
	14	520	599	ESF1440	Φ50.5*599
	16	600	679	ESF1640	Φ50.5*679
	18	680	759	ESF1840	Φ50.5*759
	20	760	839	ESF2040	Φ50.5*839
	22	840	919	ESF2240	Φ50.5*919
	24	920	999	ESF2440	Φ50.5*999
	26	1000	1079	ESF2640	Φ50.5*1079
	28	1080	1159	ESF2840	Φ50.5*1159
	30	1160	1239	ESF3040	Φ50.5*1239
	32	1240	1319	ESF3240	Φ50.5*1319
	34	1320	1399	ESF3440	Φ50.5*1399
	36	1400	1479	ESF3640	Φ50.5*1479

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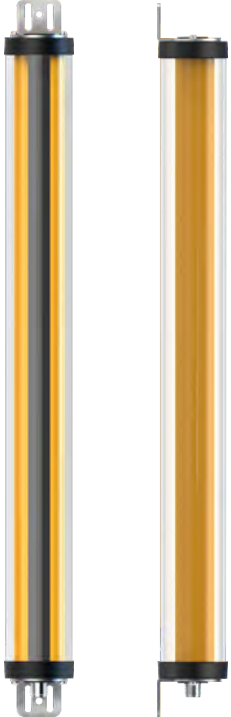
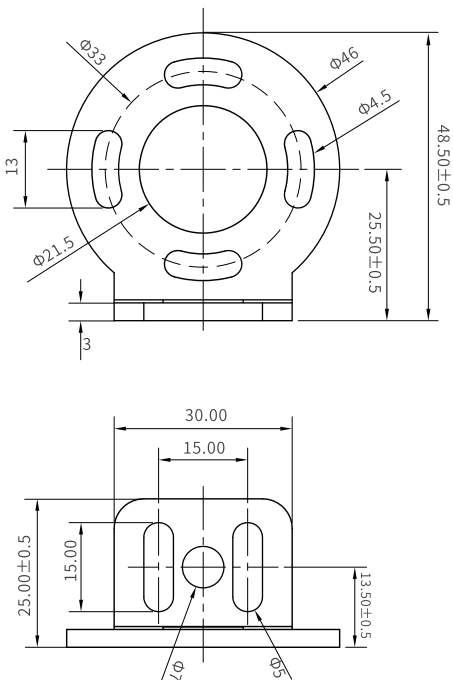
EDS-L Series

EMB-M01

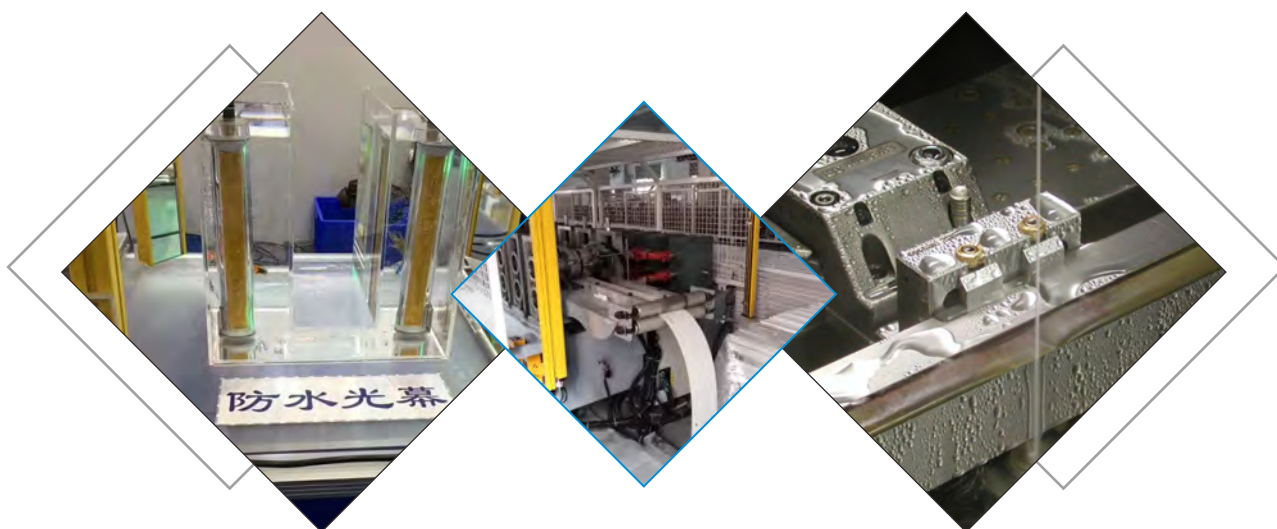
F27X Series

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Option for brackets

Picture	Accessories	Size
	1. Brackets(4 pcs) 2. M6*12 screw(4 pcs) 3. M3*6 screw(4 pcs)	 Top View Dimensions: $\Phi 33$, $\Phi 46$, $\Phi 4.5$, $\Phi 21.5$, 13, 48.50$\pm$0.5, 25.50$\pm$0.5, 3 Side View Dimensions: 30.00, 15.00, 25.00$\pm$0.5, 15.00, 13.50$\pm$0.5, $\Phi 7$, $\Phi 5$

Application case



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EB15 Series

ESA Series

ESP Series

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ESR Series

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EPC Series

EPM Series

EPK Series

EDS-R Series

EDS-L Series

EMB-M01

F27X Series