Flexglo™ F21S DMX Pixel Light (Silicone)

5 year Warranty
Solvents Resistant
UV Resistant
Flame Resistant
Salt Water Resistant
IK10 Protection

Certification Mark	UL	CE
Test Standard/Directive	UL2108 Class 2	CE-EMC
Certificate Serial Number	20180801-E360029	SZEM1712012372LMV
Report Reference	E360029-20130322	SZEM171201237201

2200K 2700K 3000K
3500K 4000K 5700K
22~57K RGB RGBW

Ambient Working Temperature
≤12W/m -40 ~ 55℃ /-40~131℉
15W/m -40 ~ 45℃ /-40~113℉

Ambient Installation Temperature
≥ -40℃ /-40℉

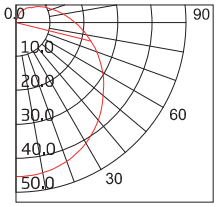
Storage Temperature
-40 ~ 60℃ /-40~140℉

Max. Mounting Surface Temperature
85℃ /185℉
specified in the non-working state of light.

CC Constant Current
DC24V

C-SFR-F21S-HB

C-SFR-F21S6-HB-24CC-RGB-WM-60-15W-166.7

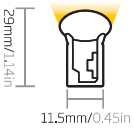


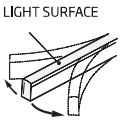
UNIT: cd
−C90/270

AVERAGE BEAM ANGLE (50%) : 145.9°

Min. Bending Diameter
120mm/4.72in

Min. Cutting Length
166.7mm/6.56in
10LEDs, 10+10LEDs





Horizontal Bending

Bending-extreme
1809 times

Tensile-instantaneous
>60 kg.f

Twist-extreme
2034 times

Warning: Extreme Destructive Tests in laboratory only, and it's forbidden to operate in practice.

Note:
1. The illuminated light length shall be an integral multiple of min. cutting length.
2. The waterproof reliability of the lighting fixture depends on the IP rating of connector (see details on page ***), and please make sure connector is properly assembled before installation. The highest IP rating we can achieve is IP68.

Item Code

C	SFR	F21S6	HB	24CC	30K	WM	60	80	15W	166.7
Company	Material	Product Series	Bending Direction	Voltage & Circuit Type	Color/CCT	Base & Lighting Surface	LEDs Qty/m	CRI	Power/m	Min. Cutting Length (mm)
Clear	SFR= Silicone Flex Ribbon	F21S6=6 Pixels	HB= Horizontal Bending	DC24V & Constant Current	R=Red G=Green B=Blue A=Amber	WM= White & Milky	60	/	15W	166.7
					22K=2200K 27K=2700K 30K=3000K 35K=3500K 40K=4000K 57K=5700K			80		
					RGB			/	12W	
					RGBW(27K)= RGB& 2700K RGBW(30K)= RGB & 3000K RGBW(40K)= RGB & 4000K				15W	
					22~57K= 2200~5700K		120	80	12W	

Feature

Flexglo™ F21S DMX Pixel Light (Silicone) is a product that each segment is individually addressable so that you can achieve myriad color changing or animation effects via compatible controller. It is a DMX protocol product with built-in IC chip of UCS512CN, available in monochrome, dynamic light, RGB and RGBW. Thanks to the excellent weatherproof and UV-resistant performance of silicone material, it features a wide ambient working temperature range of -40-55 ℃, especially suitable for harsh environment application.

Multiple connector options are available for different applications. Combined with the adoption of the DryWire™ technology,
*The IP68 Injection-moulded Connector is engineered for outdoor use, owing to its elegant appearance and strong adhesiveness acquired by the liquid silicone injection workmanship.
*The IP67 Field Assembly Connector, which is underpinned by the Insulfit™ technology that enables quick assembly in the field along with waterproof reliability (proper assembly required).

This product features a ultra long lifespan in outdoor application by leveraging other ClearTech™ such as the PinBoost™ technology enhancing physical reliability of light engine, the TwinFlex™ technology improving the conductivity and optimizing heat dissipation performance, the C-Mask™ technology making the light body self-cleaning and anti-UV and enabling consistent illumination.

Electrical Parameter

Category	C-SFR-F21S6-HB	C-SFR-F21S6-HB	C-SFR-F21S6-HB	C-SFR-F21S6-HB
Voltage	24	24	24	24
Current (mA/m)	625.0	500	500.0	625.0
Power (W/m)	15	12	12	15
Circuit Type	CC	CC	CC	CC
LED Type	2835	3015	5050	5050
LEDs Qty/m	60	120	60	60
LEDs Qty/unit	10	20(10+10)	10	10
Unit/m (Pixel Qty/m)	6(UCS512CN)	6(UCS512CN)	6(UCS512CN)	6(UCS512CN)
Min. Cutting Length (mm)	166.7	166.7	166.7	166.7
Min. Cutting Length (in)	6.56	6.56	6.56	6.56

Max. Running Length

Input: DC24V

				
Type	Socket Connector		Silicone Injection-moulded Connector	
IP Rating	IP67		IP68	
Item Code	Single-end Feed	Double-end Feed	Single-end Feed	Double-end Feed
C-SFR-F21S6-DMX-RGB/WW&W-12W-Static full loading	10m/32.8ft	20m/65.6ft	15m/49.2ft	30m/98.4ft
C-SFR-F21S6-DMX-RGB/WW&W-12W-Dynamic operating	15m/49.2ft	30m/98.4ft	20m/65.6ft	40m/131.2ft
C-SFR-F21S6-DMX-W-15W-Static full loading	10m/32.8ft	20m/65.6ft	15m/49.2ft	30m/98.4ft
C-SFR-F21S6-DMX-W-15W-Dynamic operating	15m/49.2ft	30m/98.4ft	20m/65.6ft	40m/131.2ft
C-SFR-F21S6-DMX-RGBW-15W-Static full loading	5m/16.4ft	10m/32.8ft	10m/32.8ft	20m/65.6ft
C-SFR-F21S6-DMX-RGBW-15W-Dynamic operating	10m/32.8ft	20m/65.6ft	15m/49.2ft	30m/98.4ft
Dimension of Connector	Page F21 144		Page F21 153	
Max.Packing Length	Page F21 202			

Note:
1. Above conclusion is based on voltage drop testing result of the light with 0.3m (0.98ft) cable only.
2. The maximum running length is based on the light in static full loading status exceptionally stated dynamic operating.
3. Above running length is only the light length excluding lengths of connectors. Please refer to the specific dimension of each connector.
4. The delivery length might be subject to the maximum packing length.

Flexglo™ F21S DMX Pixel Light (Silicone)

Optical Parameter

Item Code	Finished Product						LED	
	Color/CCT	Wavelength/ CCT Tolerance	Color Tolerance	CRI	Lumen/m	Lumen/ft	Color Tolerance	CRI
C-SFR-F21S6-HB-24CC-22K-WM-60-80-15W-166.7	2200K	2238±66K	<5SDCM	80	310lm	95lm	<2.3SDCM	82~87
C-SFR-F21S6-HB-24CC-27K-WM-60-80-15W-166.7	2700K	2725±85K	<5SDCM	80	380lm	116lm	<2.3SDCM	82~87
C-SFR-F21S6-HB-24CC-30K-WM-60-80-15W-166.7	3000K	3045±105K	<5SDCM	80	380lm	116lm	<2.3SDCM	82~87
C-SFR-F21S6-HB-24CC-35K-WM-60-80-15W-166.7	3500K	3465±245K	<5SDCM	80	380lm	116lm	<2.3SDCM	82~87
C-SFR-F21S6-HB-24CC-40K-WM-60-80-15W-166.7	4000K	3985±150K	<5SDCM	80	380lm	116lm	<2.3SDCM	82~87
C-SFR-F21S6-HB-24CC-57K-WM-60-80-15W-166.7	5700K	5669±305K	<5SDCM	80	380lm	116lm	<2.3SDCM	82~87
C-SFR-F21S6-HB-24CC-22~57K-WM-120-12W-166.7	2200K	2238±66K	<5SDCM	80	170lm	52lm	<2.3SDCM	82~87
	5700K	5669±305K	<5SDCM	80	210lm	64lm	<2.3SDCM	82~87
C-SFR-F21S6-HB-24CC-RG-WM-60-12W-166.7	Red	618-624nm			40lm	12lm	<3nm	
	Green	522-530nm			110lm	34lm	<3nm	
	Blue	468-474nm			20lm	6lm	<3nm	
	R+G+B	R+G+B			170lm	52lm		
C-SFR-F21S6-HB-24CC-RGBW(27K)-WM-60-15W-166.7	Red	618-624nm			40lm	12lm	<3nm	
	Green	522-530nm			110lm	34lm	<3nm	
	Blue	468-474nm			20lm	6lm	<3nm	
	White	2725±85K	<5SDCM	80	110lm	34lm	<2.3SDCM	82~87
C-SFR-F21S6-HB-24CC-RGBW(30K)-WM-60-15W-166.7	Red	618-624nm			40lm	12lm	<3nm	
	Green	522-530nm			110lm	34lm	<3nm	
	Blue	468-474nm			20lm	6lm	<3nm	
	White	3045±140K	<5SDCM	80	110lm	34lm	<2.3SDCM	82~87
C-SFR-F21S6-HB-24CC-RGBW(40K)-WM-60-15W-166.7	Red	618-624nm			40lm	12lm	<3nm	
	Green	522-530nm			110lm	34lm	<3nm	
	Blue	468-474nm			20lm	6lm	<3nm	
	White	3985±150K	<5SDCM	80	110lm	34lm	<2.3SDCM	82~87

Note:
1. CCT Tolerance refers to target CCT and tolerance (ANSI C78.377)
2. Color Tolerance refers to CLEAR standard for finished product and LED.

F21S Connector (Silicone)

Type/IP Rating	Bending Direction	Front Connector End	Front Connector Side from Left	Front Connector Side from Right	Front Connector Bottom	Seamless Middle Connector & Power Feed	Middle Connector & Power T-feed	Jumper	End Cap
Silicone Injection-moulded Connector IP68	HB	 F21S-HB-SIM/FC-01/02-E-0.3m/1m/3m/5m/10m 20AWG*2+22AWG*3	 F21S-HB-SIM/FC-02-SL-0.3m/1m/3m/5m/10m 20AWG*2+22AWG*3	 F21S-HB-SIM/FC-01-SR-0.3m/1m/3m/5m/10m 20AWG*2+22AWG*3	 F21S-HB-SIM/FC-01/02-B-0.3m/1m/3m/5m/10m 20AWG*2+22AWG*3	N/A N/A	 F21S-HB-SIM/MC-PTF-0.3m/1m/3m 20AWG*2+22AWG*3	 F21S-HB-SIM/JU-0.3m/1m 20AWG*2+22AWG*3	 F21-SIM/EC

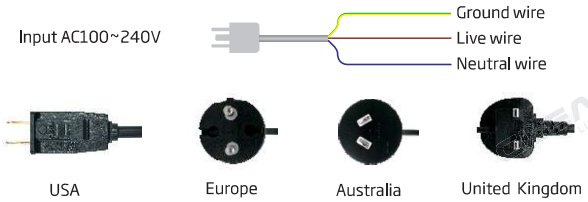
F21 Mounting Profile

Picture	Name/Item Code	Installation Way
	Aluminum Profile F21-A/PL-35/500/1000/2000mm	
	Flange Aluminum Profile F21-FA/PL-35/500/1000/2000mm	
	Serrated Aluminum Profile F21-SA/PL-20/500/1000/2000mm	
	Flange Serrated Aluminum Profile F21-FSA/PL-20/500/1000/2000mm	
	Bendable Serrated Aluminum Profile F21-BSA/PL-500/1000mm	

Flexglo™ F21S DMX Wiring Diagram

1. Please use a constant voltage power supply with corresponding output voltage, and rated wattage of the power supply shall be 25% more than the actual power consumption of light to increase its life expectancy;

2. This wiring diagram is using the mains of AC230V with brown and blue wires as an example, and please connect with the corresponding live and neutral wires for other mains electricity;



3. Types of standard plugs are optional if power cord is purchased from CLEAR.

4. Adopted UCS512CN IC inside, it is compatible with DMX512 controller at a baud rate of 250Kbps.
   4.1 Without signal amplifier and termination resistor, max. signal transmission distance of DMX controller is 300m including the light length;
   4.2 If any signal interference or attenuation occurs, in the case of no signal amplifier, 120Ω termination resistor ① should be added to achieve smooth and long-distance signal transmission up to 600m from DMX controller output to the light end;
   4.3 When DMX controller is far away from light, combined with signal amplifier, the signal can transmit further. Please be aware the max. distance between DMX512 controller and signal amplifier is 300m, and the extended signal transmission distance depends on the specification of signal amplifier.

5. DMX512 controller can run max. 512 channels each port, and for each pixel, 4 channels are needed for RGBW, 3 channels for RGB, 2 channels for Dynamic light, and 1 channel for Monochrome. The rest parts beyond control should work with other ports of controller once the total occupied channels of light exceed 512.

6. DMX controller is used for signal transmission only, and the independent power supply is required to power up lights. Please refer to the following wiring diagrams for your project. To enable address coding, the green ADR wire between lights must be connected correctly.

Single-end Feed

Light Length:

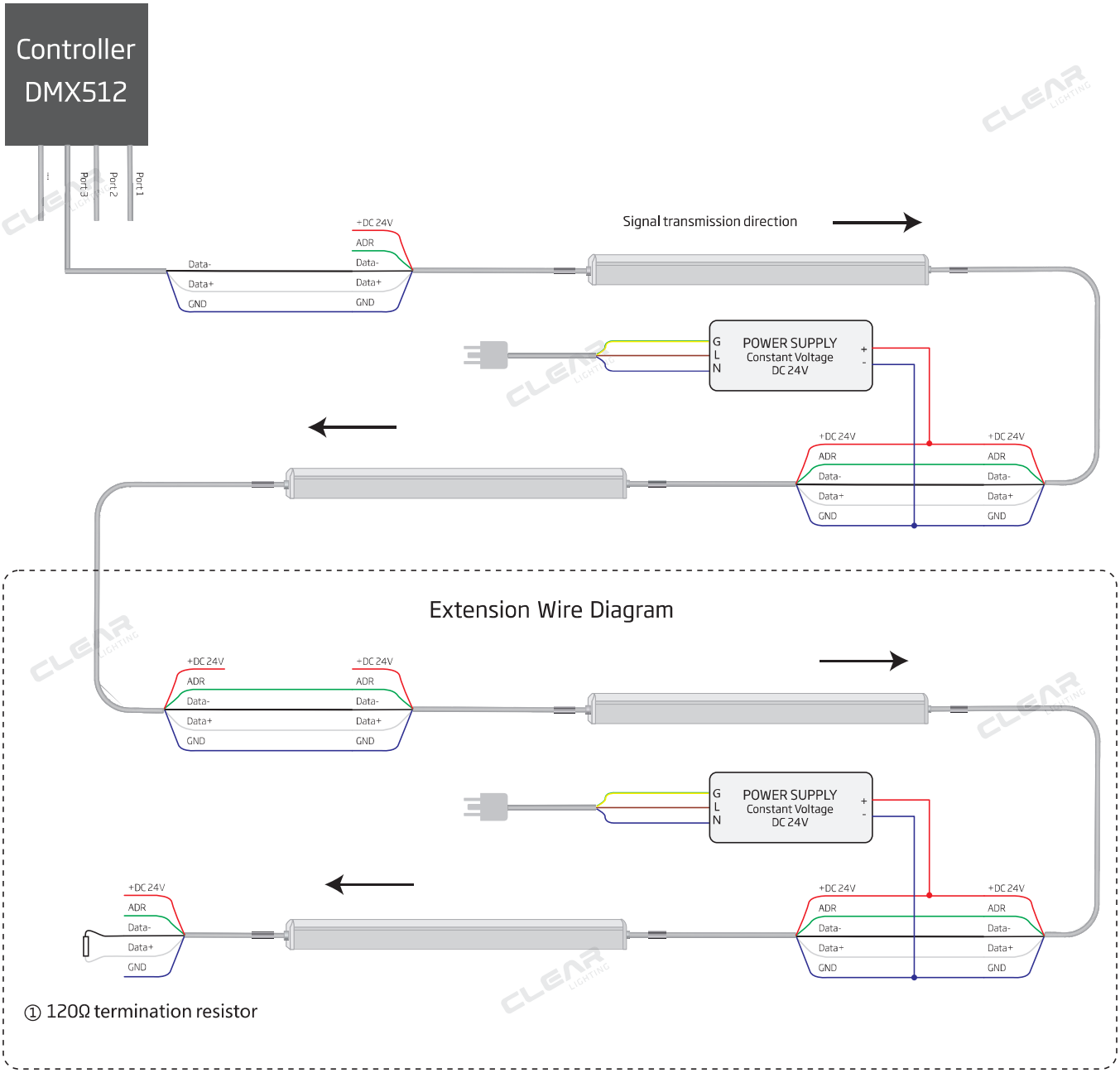
The length of the longest single light in parallel connection or sum of lights in series connection.

Cable Length:

The length of an electrical cable between power output end and light input end, and the cables for serial interconnection are inclusive.

How to Minimize Voltage Drop and Signal Transmission Attenuation

1. Please ensure the cable length is not more than the table "Max. Cable Length" according to light length and its wire gauge.
2. Please ensure the light length is less than the cable "Max. Running Length Single-end Feed".
3. 2 wires of Shielded Twisted Pair cable is required to be used to connect DMX controller and signal amplifier in the distance of max.300m, and wire gauge 20AWG or above is more recommended.



Max. Running Length Single-end Feed

Input: DC24V

Connector Type	Injection-moulded Connector
Wire Gauge	20AWG*2+22AWG*3
C-SFR-F21S6-RGB/WW&W-12W-Static full loading	15m/49.2ft
C-SFR-F21S6-RGB/WW&W-12W-Dynamic operating	20m/65.6ft
C-SFR-F21S6-W-15W-Static full loading	15m/49.2ft
C-SFR-F21S6-W-15W-Dynamic operating	20m/65.6ft
C-SFR-F21S6-RGBW-15W-Static full loading	10m/32.8ft
C-SFR-F21S6-RGBW-15W-Dynamic operating	15m/49.2ft

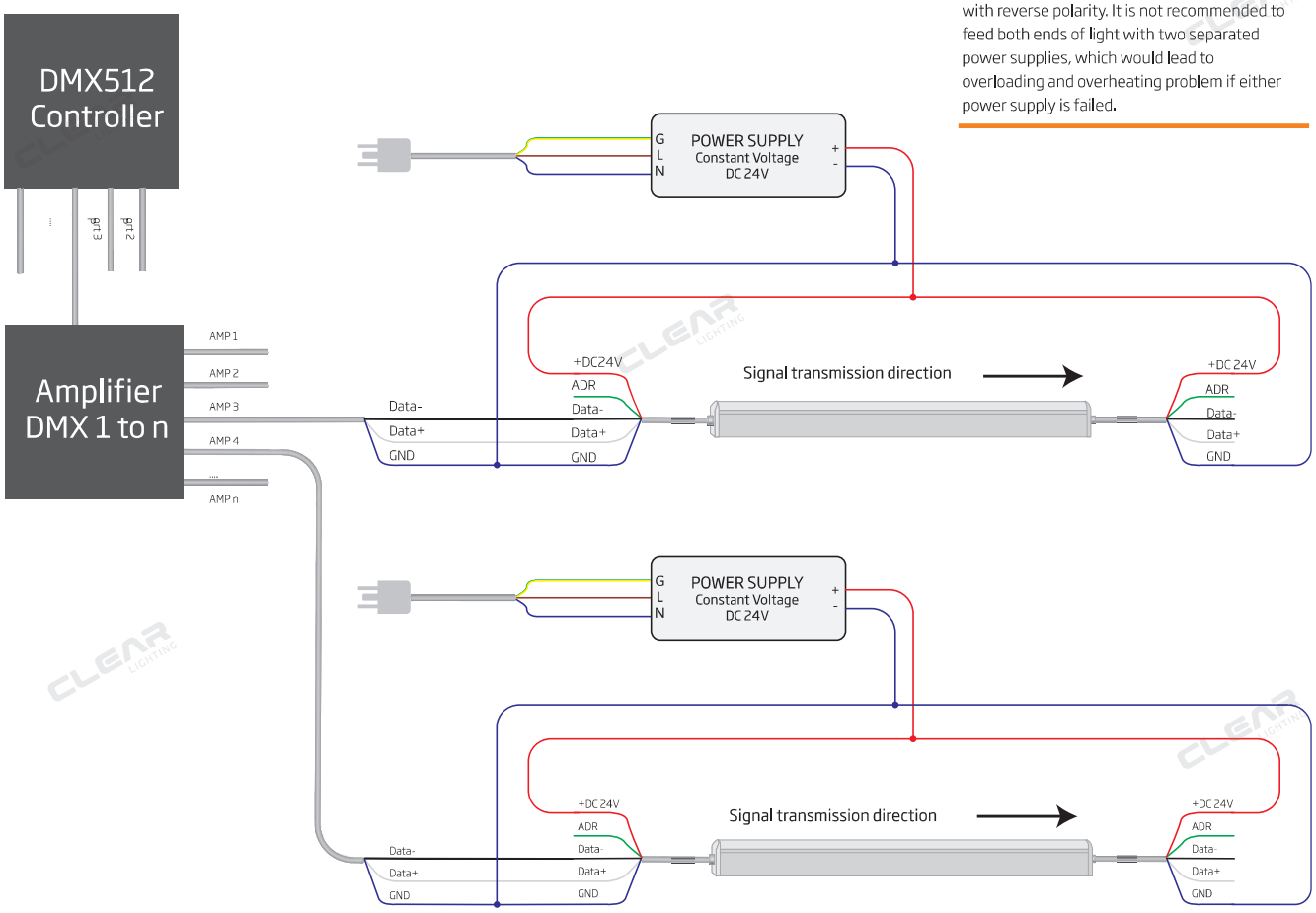
Note:

1. Above conclusion is based on voltage drop testing result of the light with 0.3m (0.98ft) cable and max. pixel output of international standard DMX512 controller.
2. The maximum running length is based on the designated light in static full loading status exceptionally stated dynamic operating.
3. Above running length is only the light length excluding lengths of connectors.
4. The delivered length might be subject to the maximum packing length.

Double-end Feed

WARNING

Please ensure the polarity connection is correct on both ends, and short circuit might occur if powering the light from both ends with reverse polarity. It is not recommended to feed both ends of light with two separated power supplies, which would lead to overloading and overheating problem if either power supply is failed.



Please refer to the following wiring diagram with double-end feed to run length that is longer than max. running length for single-end feed but less than twice the value.

Light Length:

The length of the longest single light in parallel connection or sum of lights in series connection.

Cable Length:

The length of an electrical cable between power output end and light input end, and the cables for serial interconnection are inclusive.

How to Minimize Voltage Drop and Signal Transmission Attenuation

1. It is optimal to position the power supply in the middle of a single light or multiple lines in daisy chain to keep the equivalent cable length on both ends for double-end feed.
2. Please ensure the cable length is not more than the table "Max. Cable Length" according to the half of light length and its wire gauge.
3. Please ensure the light length is less than the table "Max. Running Length Double-end Feed".
4. 2 wires of Shielded Twisted Pair cable is required to be used to connect DMX controller and signal amplifier in the distance of max.300m, and wire gauge 20AWG or above is more recommended.

Max. Running Length Double-end Feed

Input: DC24V

Connector Type	Injection-moulded Connector
Wire Gauge	20AWG*2+22AWG*3
C-SFR-F21S6-RGB/WW&W-12W-Static full loading	30m/98.4ft
C-SFR-F21S6-RGB/WW&W-12W-Dynamic operating	40m/131.2ft
C-SFR-F21S6-W-15W-Static full loading	30m/98.4ft
C-SFR-F21S6-W-15W-Dynamic operating	40m/131.2ft
C-SFR-F21S6-RGBW-15W-Static full loading	20m/65.6ft
C-SFR-F21S6-RGBW-15W-Dynamic operating	30m/98.4ft

Note:

1. Above conclusion is based on voltage drop testing result of the light with 0.3m (0.98ft) cable and max. pixel output of international standard DMX512 controller.
2. The maximum running length is based on the designated light in static full loading status exceptionally stated dynamic operating.
3. Above running length is only the light length excluding lengths of connectors.
4. The delivered length might be subject to the maximum packing length.

F21S Max. Cable Length (Silicone)

Input: DC24V

Item Code	Light Length (M)	Cable Length									
		0.32 mm²		0.52 mm²		0.81 mm²		1.32 mm²		2.07 mm²	
		22AWG		20AWG		18AWG		16AWG		14AWG	
		m	ft	m	ft	m	ft	m	ft	m	ft
C-SFR-F21S6-RGB-12W C-SFR-F21S6-W&WW-12W	1	43.7	143.3	71.0	232.9	110.6	362.8	180.2	591.1	282.6	927.0
	2	22.1	72.4	35.9	117.7	55.9	183.4	91.1	298.8	142.8	468.6
	3	14.6	47.8	23.7	77.6	36.9	120.9	60.1	197.0	94.2	309.0
	4	10.5	34.3	17.0	55.8	26.5	86.9	43.2	141.6	67.7	222.1
	5	8.0	26.3	13.0	42.7	20.3	66.5	33.0	108.4	51.8	170.0
	6	6.5	21.2	10.5	34.5	16.4	53.7	26.7	87.5	41.8	137.2
	7			8.9	29.1	13.8	45.3	22.5	73.9	35.3	115.9
	8			7.6	24.8	11.8	38.6	19.2	62.9	30.1	98.7
	9			6.2	20.5	9.7	31.9	15.8	52.0	24.9	81.5
	10			5.3	17.5	8.3	27.2	13.5	44.3	21.2	69.5
	11			4.3	14.1	6.7	22.0	10.9	35.9	17.2	56.3
	12					5.4	17.7	8.8	28.8	13.8	45.1
	13							7.5	24.7	11.8	38.8
	14							5.9	19.4	9.3	30.4
	15							4.5	14.8	7.1	23.2
C-SFR-F21S6-15W Monochrome	1	33.5	109.9	54.4	178.5	84.8	278.1	138.1	453.2	216.6	710.7
	2	16.9	55.4	27.4	90.0	42.7	140.2	69.7	228.5	109.2	358.3
	3	10.8	35.3	17.5	57.4	27.2	89.3	44.4	145.6	69.6	228.3
	4	8.1	26.4	13.1	43.0	20.4	66.9	33.2	109.0	52.1	171.0
	5	6.2	20.2	10.0	32.8	15.6	51.2	25.4	83.4	39.8	130.7
	6			8.0	26.2	12.4	40.8	20.3	66.5	31.8	104.2
	7			6.5	21.4	10.1	33.3	16.5	54.2	25.9	85.0
	8			5.1	16.8	8.0	26.2	13.0	42.7	20.4	66.9
	9			4.3	14.1	6.7	22.0	10.9	35.8	17.1	56.1
	10					5.3	17.4	8.7	28.4	13.6	44.6
	11					4.5	14.8	7.3	24.1	11.5	37.7
	12					3.3	10.7	5.3	17.4	8.3	27.3
	13					2.5	8.1	4.0	13.2	6.3	20.6
	14					1.8	5.8	2.9	9.5	4.6	14.9
	15							1.5	5.1	2.4	8.0
C-SFR-F21S6-RGBW-21W Monochrome	1	33.5	109.9	54.4	178.5	84.8	278.1	138.1	453.2	216.6	710.7
	2	16.9	55.4	27.4	90.0	42.7	140.2	69.7	228.5	109.2	358.3
	3	10.8	35.3	17.5	57.4	27.2	89.3	44.4	145.6	69.6	228.3
	4	8.1	26.4	13.1	43.0	20.4	66.9	33.2	109.0	52.1	171.0
	5	6.2	20.2	10.0	32.8	15.6	51.2	25.4	83.4	39.8	130.7
	6			8.0	26.2	12.4	40.8	20.3	66.5	31.8	104.2
	7			6.5	21.4	10.1	33.3	16.5	54.2	25.9	85.0
	8			5.1	16.8	8.0	26.2	13.0	42.7	20.4	66.9
	9					6.7	22.0	10.9	35.8	17.1	56.1
	10					5.3	17.4	8.7	28.4	13.6	44.6

Note:

1. Please check the wire gauge of your connector in the table "Max. Running Length".
E.g., Single-end feed, C-SFR-F21S-15W, 5m light length with 20AWG wire, max. cable length should refer to the corresponding value 10m for 5m light length;
Double-end feed, C-SFR-F21S-15W, 10m light length with 20AWG wire, max. cable length of each end should refer to the corresponding value 10m for half of light length 5m;
2. The above cable lengths are calculated based on 10% allowable voltage drop maximum.
3. To aviod signal degredation, please ensure the data cable length is within the maximum signal transmission distance according to the specification of controller/signal amplifier.