

Flexglo™ F21D Dynamic Light (Silicone)



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

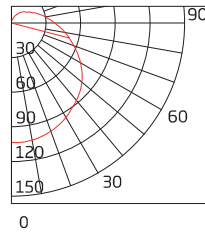


2200K~5700K

Ambient Working Temperature ≤12W/m -40 ~ 55°C / -40 ~ 131°F	Ambient Installation Temperature ≥ -40°C / -40°F	Storage Temperature -40 ~ 60°C / -40 ~ 140°F
Max. Mounting Surface Temperature 85°C / 185°F <i>specified in the non-working state of light.</i>	Constant Voltage DC24V	

C-SFR-F21D-HB

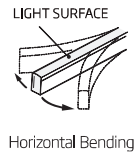
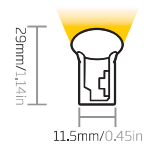
C-SFR-F21D-HB-24CC-22~57K-WM-144-80-12W-83.3



UNIT: cd
-C90/270

AVERAGE BEAM ANGLE (50%): 147.9°

- Min. Bending Diameter
120mm/4.72in
- Min. Cutting Length
83.3mm/3.28in
6+6LEDs



- Bending-extreme
401 times

- Tensile-instantaneous
>60 kg.f

- Twist-extreme
9844 times

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

Note:

- The illuminated light length shall be an integral multiple of min. cutting length.
- The waterproof reliability of the lighting fixture depends on the IP rating of connector, and please make sure connector is properly assembled before installation. The highest IP rating we can achieve is IP68.

Feature

Flexglo™ F21D Dynamic Light (Silicone) is tunable from 2200K to 5700K or other colors, and dim to warm are optional, setting the harmonious tone for the surrounding space. Thanks to the excellent weatherproof and UV-resistant performance of silicone material, it features a wide ambient working temperature range of -40-55 °C, 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.

Item Code

C	SFR	F21D	HB	24CV	22~57K	WM	144	80	12W	83.3
Company	Material	Product Series	Bending Direction	Voltage & Circuit Type	CCT	Base & Lighting Surface	LEDs Qty/m	CRI	Power/m	Min. Cutting Length (mm)
Clear	SFR= Silicone Flex Ribbon	F21D= Dynamic	HB= Horizontal Bending	DC24V & Constant Voltage	22~57K= 2200~5700K	WM= White & Milky	144	80	12W	83.3

Electrical Parameter

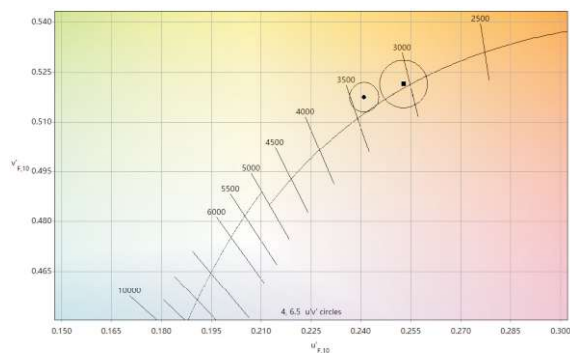
Category	C-SFR-F21D-HB
Voltage	24
Current (mA/m)	500.0
Power (W/m)	12
Circuit Type	CV
LED Type	3014
LEDs Qty/m	144
LEDs Qty/unit	12(6+6)
Unit/m	12
Min. Cutting Length (mm)	83.3
Min. Cutting Length (in)	3.28

Optical Parameter

Item Code	Finished Product						LED	
	CCT	CCT Tolerance	Color Tolerance	CRI	Lumen/m	Lumen/ft	Color Tolerance	CRI
C-SFR-F21D-HB-24CV-22~57K-WM-144-80-12W-83.3	2200K	2238±102K	<5SDCM	80	170lm	52lm	<2.3SDCM	82~87
	5700K	5669±355K	<5SDCM	80	210lm	64lm	<2.3SDCM	82~87

Note:

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



Color Matching

Color temperature value stated on all CLEAR's documents refers to finished products. LED's color temperature would be shifted by the light diffuser made of PVC or silicone material. CLEAR calibrates color temperature and color coordinate of tailor-made LEDs with proprietary color-matching algorithms to produce a precise color temperature and color coordinate close to black body locus for finished products. All LEDs would be strictly tested and tightly controlled to ensure finished products can meet ANSI standard.





















Max. Running Length Input: DC24V

Type	Sleeve Connector		Snap Connector		Socket Connector		Silicone Injection-moulded Connector	
IP Rating	IP40		IP67		IP67		IP68	
Item Code	Single-end Feed	Double-end Feed	Single-end Feed	Double-end Feed	Single-end Feed	Double-end Feed	Single-end Feed	Double-end Feed
C-FR-F21D-12W-Static full loading	10m/32.8ft	20m/65.6ft	10m/32.8ft	20m/65.6ft	10m/32.8ft	20m/65.6ft	15m/49.2ft	30m/98.4ft
C-FR-F21D-12W-Dynamic operating	20m/65.6ft	40m/131.2ft	20m/65.6ft	40m/131.2ft	20m/65.6ft	40m/131.2ft	30m/98.4ft	60m/196.8ft
Dimension of Connector	Page F21 129		Page F21 135		Page F21 144		Page F21 153	
Max.Packing Length	Page F21 202							
























Note:

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

F21D Connector (Silicone)

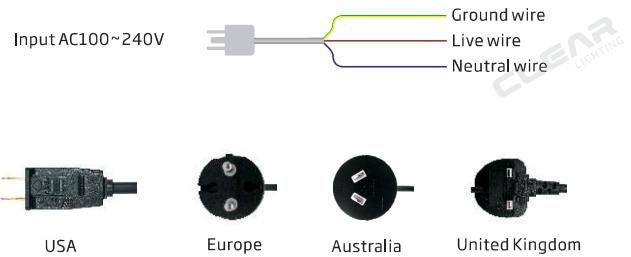
Type/IP Rating	Bending Direction	Front Connector End	Front Connector Side from Left	Front Connector Side from Right	Front Connector Bottom	Seamless Middle Connector & Power Feed	Middle Connector & Power T-feed	Jumper	End Cap
Sleeve Connector IP40	HB	 F21D-HB-SL/FC-01/02-E 0.3m/1m/3m/5m/10m/15m/20m 18AWG*3	N/A	N/A	N/A	N/A			 F21-SL/EC
Snap Connector IP67	HB	 F21D-HB-SN/FC-01/02-E 0.3m/1m/3m/5m/10m/15m/20m 18AWG*3	 F21D-HB-SN/FC-01/02-SL 0.3m/1m/3m/5m/10m/15m/20m 18AWG*3	 F21D-HB-SN/FC-01/02-SR 0.3m/1m/3m/5m/10m/15m/20m 18AWG*3	 F21D-HB-SN/FC-01/02-B 0.3m/1m/3m/5m/10m/15m/20m 18AWG*3	N/A			 F21-SN/EC-01/02
Socket Connector IP67	HB	 F21D-HB-SO/FC-01/02-E 0.3m/1m/3m/5m 18AWG*3	N/A	N/A	N/A	N/A	N/A	N/A	 F21-SO/EC
Silicone Injection-moulded Connector IP68	HB	 F21D-HB-SIM/FC-01/02-E 0.3m/1m/3m/5m/10m/15m/20m 18AWG*3	 F21D-HB-SIM/FC-02-SL 0.3m/1m/3m/5m/10m/15m/20m 18AWG*3	 F21D-HB-SIM/FC-01-SR 0.3m/1m/3m/5m/10m/15m/20m 18AWG*3	 F21D-HB-SIM/FC-01/02-B 0.3m/1m/3m/5m/10m/15m/20m 18AWG*3	N/A			 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	     

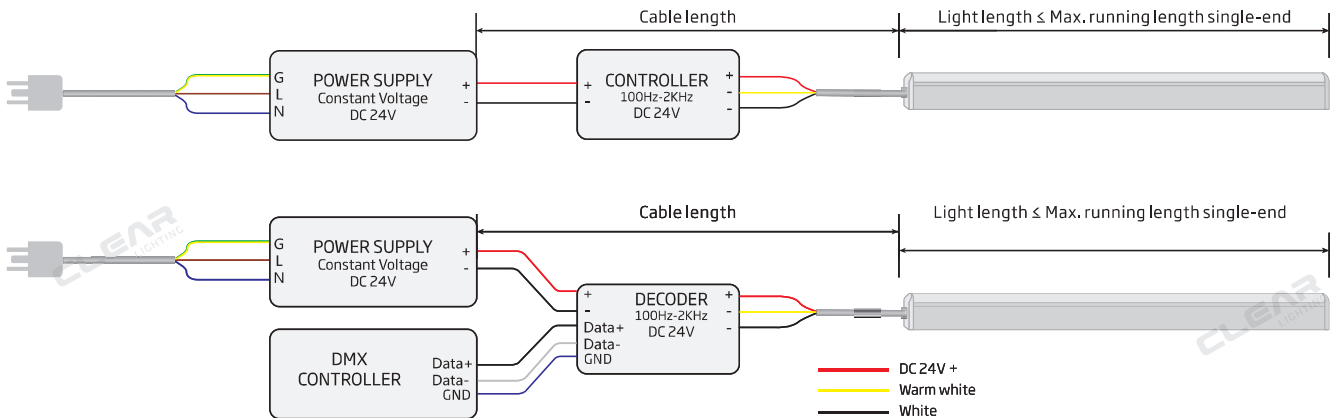
Flexglo™ F21D Wiring Diagram

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; A compatible controller is required to achieve various light changing effects;
2. The rated power of controller/decoder shall be higher than the actual power consumption of light; its frequency range shall be 100~2000Hz, and 500Hz is recommended;
3. 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;



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

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. Shielded Twisted Pair cable is required to be used to connect DMX master controller and decoder, and its length shall be less than 300m.

Max. Running Length Single-end Feed

Input: DC24V

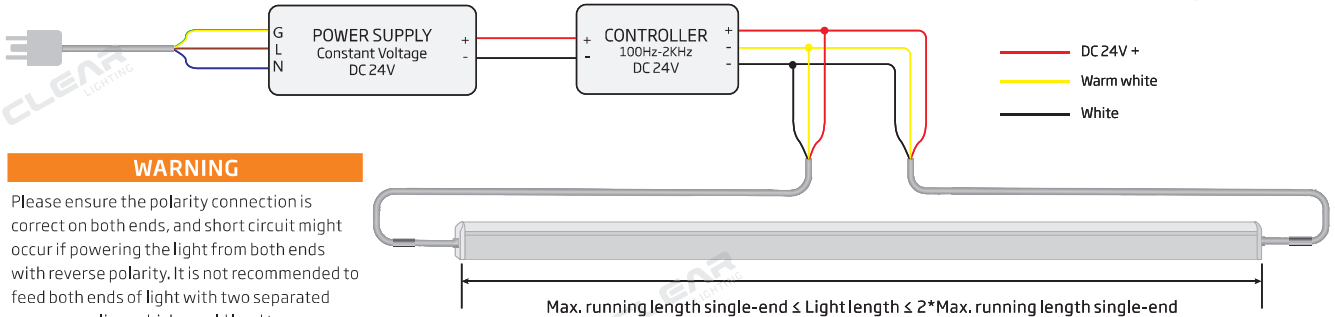
Connector Type	Sleeve Connector	Snap Connector	Socket Connector	Injection-moulded Connector	Dual Injection-moulded Connector
Wire Gauge	18AWG*3	18AWG*3	18AWG*3	18AWG*3	18AWG*3
C-FR-F21D-12W-Static full loading	10m/32.8ft	10m/32.8ft	10m/32.8ft	10m/32.8ft	10m/32.8ft
C-FR-F21D-12W-Dynamic operating	20m/65.6ft	20m/65.6ft	20m/65.6ft	20m/65.6ft	20m/65.6ft
C-FR-ProF21D-12W-Static full loading	10m/32.8ft	10m/32.8ft	10m/32.8ft	10m/32.8ft	10m/32.8ft
C-FR-ProF21D-12W-Dynamic operating	20m/65.6ft	20m/65.6ft	20m/65.6ft	20m/65.6ft	20m/65.6ft
C-SFR-F21D-12W-Static full loading	15m/49.2ft	15m/49.2ft	15m/49.2ft	15m/49.2ft	/
C-SFR-F21D-12W-Dynamic operating	30m/98.4ft	30m/98.4ft	30m/98.4ft	30m/98.4ft	/

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 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.

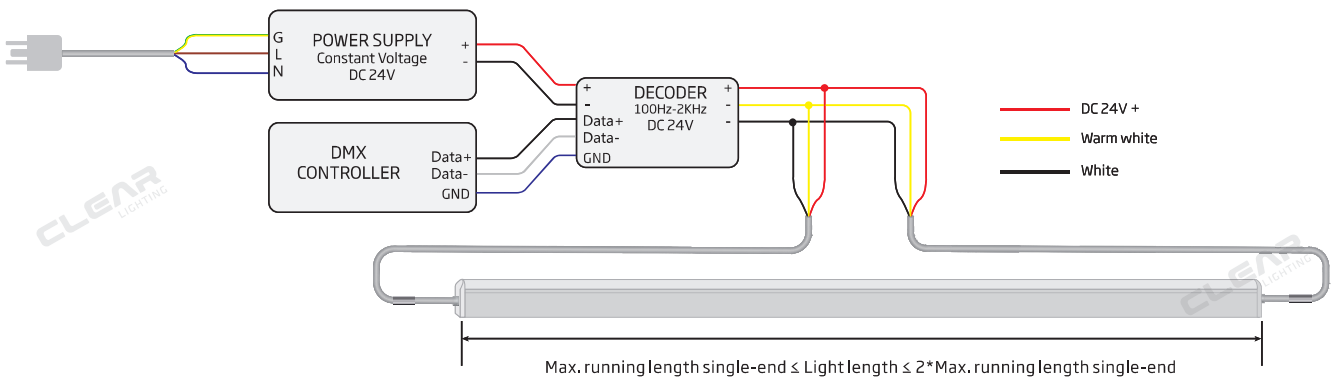
Double-end Feed

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.



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.



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. Shielded Twisted Pair cable is required to be used to connect DMX master controller and decoder, and its length shall be less than 300m.

Max. Running Length Double-end Feed

Input: DC24V

Connector Type	Sleeve Connector	Snap Connector	Socket Connector	Injection-moulded Connector	Dual Injection-moulded Connector
Wire Gauge	18AWG*3	18AWG*3	18AWG*3	18AWG*3	18AWG*3
C-FR-F21D-12W-Static full loading	20m/65,6ft	20m/65,6ft	20m/65,6ft	20m/65,6ft	20m/65,6ft
C-FR-F21D-12W-Dynamic operating	40m/131,2ft	40m/131,2ft	40m/131,2ft	40m/131,2ft	40m/131,2ft
C-FR-ProF21D-12W-Static full loading	20m/65,6ft	20m/65,6ft	20m/65,6ft	20m/65,6ft	20m/65,6ft
C-FR-ProF21D-12W-Dynamic operating	40m/131,2ft	40m/131,2ft	40m/131,2ft	40m/131,2ft	40m/131,2ft
C-SFR-F21D-12W-Static full loading	30m/98,4ft	30m/98,4ft	30m/98,4ft	30m/98,4ft	/
C-SFR-F21D-12W-Dynamic operating	60m/196,8ft	60m/196,8ft	60m/196,8ft	60m/196,8ft	/

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 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.

F21D Max. Cable Length (PVC)

Input: DC24V

Item Code	Light Length (M)	Cable Length									
		0.32 mm ²		0.52 mm ²		0.81 mm ²		1.32 mm ²		2.07 mm ²	
		22AWG		20AWG		18AWG		16AWG		14AWG	
		m	ft	m	ft	m	ft	m	ft	m	ft
C-FR-F21D-12W C-FR-ProfF21D-12W	1	57.0	187.0	92.6	303.9	144.3	473.4	235.1	771.4	368.7	1209.7
	2	28.5	93.5	46.3	151.9	72.1	236.7	117.6	385.7	184.4	604.9
	3	18.3	60.2	29.8	97.8	46.4	152.3	75.6	248.2	118.6	389.2
	4	12.9	42.3	20.9	68.7	32.6	107.0	53.1	174.3	83.3	273.4
	5	9.1	30.0	14.9	48.7	23.1	75.9	37.7	123.7	59.1	194.0
	6	7.0	22.9	11.3	37.2	17.7	57.9	28.8	94.4	45.1	148.1
	7	5.4	17.8	8.8	29.0	13.8	45.1	22.4	73.6	35.2	115.4
	8			6.8	22.4	10.6	34.9	17.4	56.9	27.2	89.3
	9			4.8	15.8	7.5	24.6	12.2	40.1	19.2	62.8
	10			3.1	10.3	4.9	16.0	7.9	26.0	12.4	40.8

F21D Max. Cable Length (Silicone)

Input: DC24V

Item Code	Light Length (M)	Cable Length									
		0.32 mm ²		0.52 mm ²		0.81 mm ²		1.32 mm ²		2.07 mm ²	
		22AWG		20AWG		18AWG		16AWG		14AWG	
		m	ft	m	ft	m	ft	m	ft	m	ft
C-SFR-F21D-12W	1	55.8	183.1	90.7	297.6	141.3	463.5	230.2	755.4	361.0	1184.5
	2	28.2	92.5	45.8	150.3	71.4	234.2	116.3	381.7	182.4	598.5
	3	18.9	61.9	30.7	100.6	47.8	156.7	77.8	255.3	122.0	400.4
	4	13.5	44.3	22.0	72.0	34.2	112.2	55.7	182.9	87.4	286.8
	5	10.4	34.1	16.9	55.5	26.3	86.4	42.9	140.8	67.3	220.8
	6	8.3	27.4	13.6	44.5	21.1	69.3	34.4	112.9	54.0	177.0
	7			11.1	36.5	17.3	56.9	28.2	92.7	44.3	145.3
	8			9.3	30.6	14.5	47.6	23.6	77.6	37.1	121.7
	9			7.9	26.0	12.3	40.5	20.1	66.0	31.5	103.5
	10			6.8	22.4	10.6	34.9	17.3	56.8	27.2	89.1
	11			5.2	16.9	8.0	26.3	13.1	42.9	20.5	67.3
	12					7.0	22.8	11.3	37.2	17.8	58.3
	13					5.0	16.4	8.2	26.8	12.8	42.0
	14					3.8	12.5	6.2	20.3	9.7	31.9
	15					2.7	8.9	4.4	14.5	6.9	22.7

Note:

1. Please check the wire gauge of your connector in the table "Max. Running Length".

E.g.,

Single-end feed, C-FR-F21D-12W, 5m light length with 18AWG wire, max. cable length should refer to the corresponding value 23.1m for 5m light length;

Double-end feed, C-FR-F21D-12W, 10m light length with 18AWG wire, max. cable length of each end should refer to the corresponding value 23.1m for half of light length 5m;

2. The above cable lengths are calculated based on 10% allowable voltage drop maximum.