Flexglo[™] F23B Monochrome - White Light (Silicone)





Min. Bending Diameter

100mm/3.94in

83.3mm/3.28in

(€

CE-EMC

SZEM1712012372LMV

SZEM171201237201

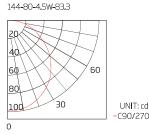
C-SFR-F23B-VB

4000K

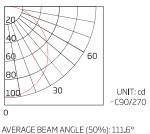
5700K

3500K





C-SFR-F23B-VB-24CV-30K-WM-







10mm/0.39ir



8

IS 10322

R-41128376

NO.20190425001



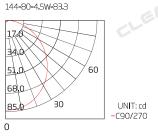


Twist-extreme 6861 times

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

C-SFR-F23B-HB





C-FR-F23B-HB-24CV-30K-WM-

AVERAGE BEAM ANGLE (50%): 105.9°

100mm/3,94in

Min. Cutting Length 83.3mm/3.28in 12LEDs



Min. Bending Diameter







Horizontal Bending

Tensile-instantaneous Twist-extreme >40kg.f 7878 times

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

Note:

- $1. The \, illuminated \, light \, length \, shall \, be \, an \, integral \, multiple \, of \, min. \, cutting \, length.$
- $\textbf{2.} The \ waterproof \ reliability \ of \ the \ lighting \ fixture \ depends \ on \ the \ lP \ rating \ of \ connector, \ and$ $please\ make\ sure\ connector\ is\ properly\ assembled\ before\ installation.\ The\ highest\ IP\ rating\ we\ can\ achieve\ is\ IP67.$





Feature

Flexglo™ F23B Monochrome - White Light (Silicone), is a popular item for architectural and marine market with optional rated power of 4.5W/m and 9W/m. Its CRI value can reach 95Ra and maximum luminous flux is up to 440lm/m. 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.

The IP67 Injection-moulded Connector is engineered for outdoor use, owing to its elegant appearance and strong adhesiveness acquired by the liquid silicone injection workmanship.

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

C-SFR-F23B-VB/HB	C-SFR-F23B-VB/HB
24	24
375.0	187.5
9	4.5
CV	CV
3015	3015
144	144
12	12
12	12
83.3	83.3
3.28	3.28
	24 375.0 9 CV 3015 144 12 12 12 83.3

Item Code

С	SFR	F23B	VB	24CV	30K	WM	144	80	4.5W	83.3
Company	Material	Product Series	Bending Direction	Voltage & Circuit Type	сст	Base & Lighting Surface	LEDs Qty/m	CRI	Power/m	Min. Cutting Length (mm)
C l ear	SFR= Silicone Flex Ribbon	F23 B=	VB= Vertical Bending	DC24V &	22K=2200K 27K=2700K 30K=3000K 35K=3500K 40K=4000K 57K=5700K	WM= White &	144	80	4.5W 9W	83.3
Cledi	Flex Ribbon	Monochrome	HB= Horizontal Bending	Constant Voltage	27K=2700K 30K=3000K 35K=3500K 40K=4000K	Milky	144	90 95	4.5W	05.5



Optical Parameter





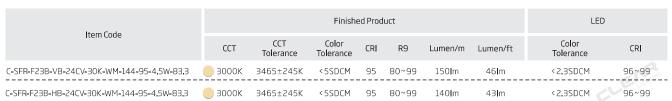
			Finished Pro	duct			L	ĒD
Item Code	ССТ	CCT Tolerance	Color Tolerance	CRI	Lumen/m	Lumen/ft	Color Tolerance	CRI
C-SFR-F23B-VB-24CV-22K-WM-144-80-4.5W-83.3	<u> </u>	2238±66K	<5SDCM	80	195 l m	59 l m	<2.3SDCM	82~87
C-SFR-F23B-VB-24CV-27K-WM-144-80-4.5W-83.3	2700K	2725±85K	<5SDCM	80	220 l m	67 l m	<2.3SDCM	82~87
C-SFR-F23B-VB-24CV-30K-WM-144-80-4.5W-83.3	_ 3000К	3045±105K	<5SDCM	80	220 l m	67 l m	<2,3SDCM	82~87
C-SFR-F23B-VB-24CV-35K-WM-144-80-4.5W-83.3	3500K	3465±245K	<5SDCM	80	220 l m	67 l m	<2.3SDCM	82~87
C-SFR-F23B-VB-24CV-40K-WM-144-80-4,5W-83,3	4000K	3985±150K	<5SDCM	80	220 l m	67 l m	<2.3SDCM	82~87
C-SFR-F23B-VB-24CV-57K-WM-144-80-4.5W-83.3	5700K	5669±305K	<5SDCM	80	220 l m	67 l m	<2.3SDCM	82~87
C-SFR-F23B-VB-24CV-22K-WM-144-80-9W-83,3	2200K	2238±66K	<5SDCM	80	390 l m	119 m	<2,3SDCM	82~87
C-SFR-F23B-VB-24CV-27K-WM-144-80-9W-83,3	2700K	2725±85K	<5SDCM	80	440 l m	134 l m	<2.3SDCM	82~87
C-SFR-F23B-VB-24CV-30K-WM-144-80-9W-83.3	_ 3000К	3045±105K	<5SDCM	80	440 l m	134 l m	<2.3SDCM	82~87
C-SFR-F23B-VB-24CV-35K-WM-144-80-9W-83,3	3500K	3465±245K	<5SDCM	80	440 l m	134 l m	<2,3SDCM	82~87
C-SFR-F23B-VB-24CV-40K-WM-144-80-9W-83,3	4000K	3985±150K	<5SDCM	80	440 l m	134 l m	<2.3SDCM	82~87
C-SFR-F23B-VB-24CV-57K-WM-144-80-9W-83.3	5700K	5669±305K	<5SDCM	80	440 l m	134 l m	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-22K-WM-144-80-4.5W-83.3	_ 2200К	2238±66K	<5SDCM	80	185 l m	56 l m	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-27K-WM-144-80-4.5W-83.3	2700K	2725±85K	<5SDCM	80	210 l m	64 l m	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-30K-WM-144-80-4.5W-83.3	_ 3000К	3045±105K	<5SDCM	80	210 l m	64 l m	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-35K-WM-144-80-4.5W-83.3	3500K	3465±245K	<5SDCM	80	210 m	64 l m	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-40K-WM-144-80-4.5W-83.3	4000K	3985±150K	<5SDCM	80	210 l m	64 l m	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-57K-WM-144-80-4.5W-83.3	5700K	5669±305K	<5SDCM	80	210 l m	64 l m	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-22K-WM-144-80-9W-83.3		2238±66K	<5SDCM	80	370 l m	113 l m	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-27K-WM-144-80-9W-83.3	2700K	2725±85K	<5SDCM	80	420 l m	128 i m	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-30K-WM-144-80-9W-83,3	_ зооок	3045±105K	<5SDCM	80	420 l m	128 l m	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-35K-WM-144-80-9W-83.3	3500K	3465±245K	<5SDCM	80	420 l m	128 l m	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-40K-WM-144-80-9W-83.3	4000K	3985±150K	<5SDCM	80	420 l m	128 l m	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-57K-WM-144-80-9W-83.3	5700K	5669±305K	<5SDCM	80	420 l m	128 i m	<2,3SDCM	82~87

CRI90

live Code			Finishe	ed Prod	uct			LED		
Item Code	CCT	CCT Tolerance	Color Tolerance	CRI	R9	Lumen/m	Lumen/ft	Color Tolerance	CRI	
C-SFR-F23B-VB-24CV-27K-WM-144-90-4.5W-83.3	2700K	2725±85K	<5SDCM	90	35~80	180 l m	55 l m	<2.3SDCM	91~97	
C-SFR-F23B-VB-24CV-30K-WM-144-90-4.5W-83.3	_ 3000К	3045±105K	<5SDCM	90	35~80	180 l m	55 l m	<2.3SDCM	91~97	
C-SFR-F23B-VB-24CV-35K-WM-144-90-4,5W-83.3	3500K	3465±245K	<5SDCM	90	35~80	180 m	55 l m	<2.3SDCM	91~97	
C-SFR-F23B-VB-24CV-40K-WM-144-90-4,5W-83,3	4000K	3985±150K	<5SDCM	90	35~80	180 l m	55 l m	<2.3SDCM	91~97	
C-SFR-F23B-HB-24CV-27K-WM-144-90-4.5W-83.3	2700K	2725±85K	<5SDCM	90	35~80	170 l m	52 l m	<2.3SDCM	91~97	
C-SFR-F23B-HB-24CV-30K-WM-144-90-4,5W-83.3	_ 3000К	3045±105K	<5SDCM	90	35~80	170 l m	52 l m	<2.3SDCM	91~97	
C-SFR-F23B-HB-24CV-35K-WM-144-90-4,5W-83,3	3500K	3465±245K	<5SDCM	90	35~80	170 l m	52 l m	<2,3SDCM	91~97	
C-SFR-F23B-HB-24CV-40K-WM-144-90-4,5W-83,3	4000K	3985±150K	<5SDCM	90	35~80	170 l m	52 l m	<2.3SDCM	91~97	



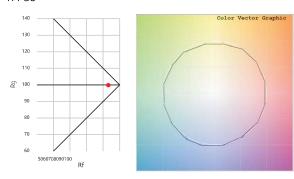
CRI 95



Note:

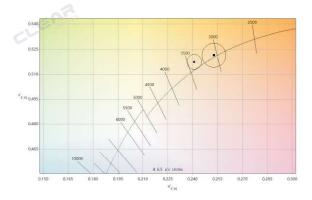
- 1, CCT Tolerance refers to target CCT and tolerance (ANSI C78.377)
- 2. Color Tolerance refers to CLEAR standard for the different batch of finished product and LED, and it's < 3SDCM for same batches of finished product.

TM-30



IES TM-30-15 is a new system of several related measures and graphics that can be used together to effectively evaluate and communicate a light source's color rendering $properties. \ The \ development \ of \ the \ method \ involved \ synthesizing \ multiple \ related \ research$ efforts and combining ideas into a single, cohesive system of objective information that can be used to aid decision-making processes, such as finding the preferred light source for a given application or evaluating the tradeoffs between efficacy and color rendering.

Measure	Abbreviation	Description
Fidelity Index	Rf	Analogous to CIE Ra (CRI). Characterizes the average color shift of the 99 CES to characterize the overall level of similarity between the test source and reference illuminant. Values range from 0 to 100.
Gamut Index	Rg	Compares the area enclosed by the average chromaticity coordinates nates in each of 16 hue bins to characterize the average saturation level of the test source compared to the reference illuminant. A neutral score is 100, with values greater than 100 indicating an increase crease in saturation and values less than 100 indicating a decrease in saturation. The range in values grows as fidelity decreases.



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

	-60	1		8			
Туре	Swivel C	onnector	Socket 0	Connector	Silicone Injection-moulded Connector		
IP Rating	IP	20	IP	65	IP67		
Item code	Single-end Feed	Double-end Feed	Single-end Feed	Double-end Feed	Single-end Feed	Double-end Feed	
C-SFR-F23B-4.5W	10m/32 . 8ft	20m/65 . 6ft	10m/32.8ft	20m/65.6ft	15m/49.2ft	30m/98.4ft	
C-SFR-F23B-9W	5m/16.4ft	10m/32.8ft	5m/16.4ft	10m/32 . 8ft	7.5m/24.6ft	15m/49.2ft	

- 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.
- 3. Above running length is only the light length excluding lengths of connectors.
- 4. The delivery length might be subject to the maximum packing length.



F23B Connector (Silicone)

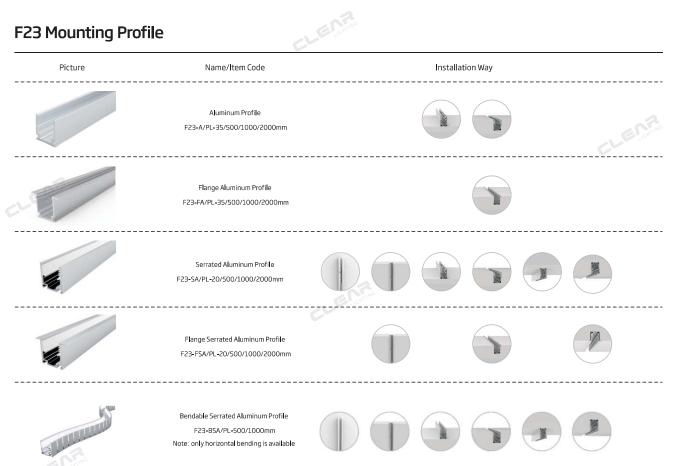
Type/IP Rating	Bending Direction	Front Connector End	Front Connector Side from Left	Front Connector Side from Right	Front Connector Bottom	Seamless Middle Connector & Power Feed	Middle Connector & Power T-feed	Jumper	End Cap
Swivel	НВ	F23B-HB-SW/FC- 01/02-E-0,3m/Im 22AWG*2	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	F23-SW/EC
Connector -	VB	F23B-VB-SW/FC- 01/02-E-0.3m/1m 22AWG*2	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	F23-SW/EC
Socket	нв	F23B-HB-S0/FC- 01/02-E- 0.3m/1m/3m/5m 22AWG*2	N/A	N/A	N/A	N/A N/A	N/A N/A	N/A N/A	F23-S0/EC
Connector –	ector55	F23B-VB-S0/FC- 01/02-E- 0.3m/1m/3m/5m 22AWG*2	N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	F23-S0/EC
Silicone Injection-	нв	F23B-HB-SIM/FC- 01/02-E- 0,3m/1m/3m/5m/ 10m/15m/20m 22AWG*2	F23B-HB-SIM/FC- 02-SL- 03m/1m/3m/5m/ 10m/15m/20m 22AWG*2	F23B-HB-SIM/FC- 01-5R- 0.3m/1m/3m/5m/ 10m/15m/20m 22AWG*2	F23B-HB-SIM/FC- 01/02-B- 0.3m/1m/3m/5m/ 10m/15m/20m 22AWG*2	N/A	F23B-HB-SIM/MC- PTF-0.3m/1m/3m 22AWG*2	F23B-HB-SIM/JU- 0.3m/Im 22AWG*2	F23-SIM/EC
moulded - Connector IP67	VB	F23B-VB-SIM/FC- 01/02-E- 0.3m/1m/3m/5m/ 10m/15m/20m 22AWG*2	F23B-VB-SIM/FC- 01/02-SL- 0.3m/1m/3m/5m/ 10m/15m/20m 22AWG*2	F23B-VB-SIM/FC- 01/02-SR- 0.3m/1m/3m/5m/ 10m/15m/20m 22AWG*2	F23B-VB-SIM/FC- 01/02-B- 0.3m/1m/3m/5m/ 10m/15m/20m 22AWG*2	N/A	F23B-VB-SIM/MC- PTF-0.3m/1m/3m 22AWG*2	F23B-VB-SIM/JU- 0.3m/1m 22AWG*2	F23-SIM/EC

C. Lorina

ELE LICHTING

ELE JOHNNE

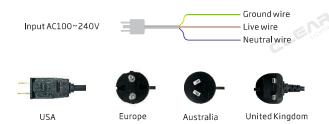
F23 Mounting Profile





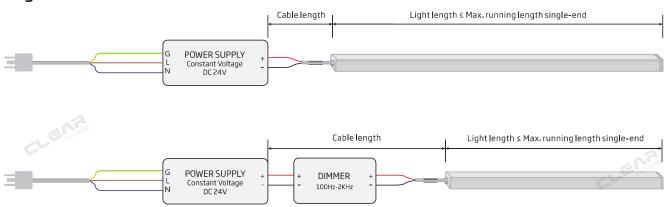
Flexglo[™] F23B Wiring Diagram

- 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. Dimming frequency ranges from 100Hz to 2000Hz, and 500Hz is recommended.



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

- 1. Please ensure the cable length is not more than the table "Max. Cable Length" according to light length and its wire gauge.
- ${\it 2. Please ensure the light length is less than the cable "Max. Running Length Single-end Feed".}\\$

Max. Running Length Single-end Feed

Input: DC24V

Connector Type	Swivel Connector	Socket Connector	Injection-moulded Connector	Dual Injection-moulded Connector
Wire Gauge	22AWG*2	22AWG*2	22AWG*2	22AWG*2
C-FR-F23B-4,5W	10m/32,8ft	10m/32,8ft	10m/32 . 8ft	10m/32 . 8ft
C-SFR-F23B-4.5W	10m/32 . 8ft	10m/32.8ft	15m/49.2ft	/
C-SFR-F23B-9W	5m/16 . 4ft	5m/16 . 4ft	7.5m/24.6ft	/

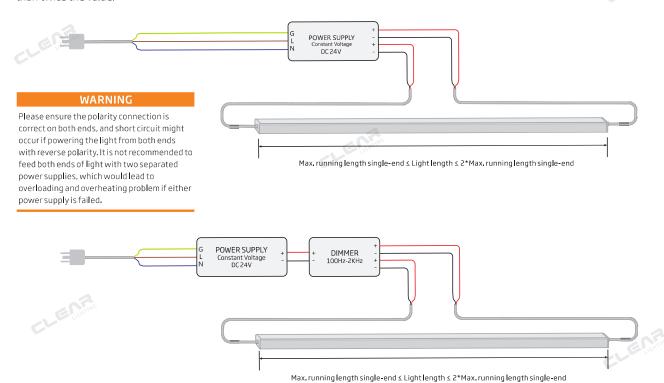
Note

- 1. Above conclusion is based on voltage drop testing result of the light with 0.3 m (0.98 ft) cable only.
- $\textbf{2.} The \, maximum \, running \, \textbf{length} \, \textbf{is} \, \textbf{based} \, \textbf{on} \, \textbf{the} \, \textbf{designated} \, \textbf{light} \, \textbf{in} \, \textbf{static} \, \textbf{full loading} \, \textbf{status.}$
- 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

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

- 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".

Max. Running Length Double-end Feed

Input: DC24V

Connector Type	Swivel Connector	Socket Connector	Injection-moulded Connector	Dual Injection-moulded Connector
Wire Gauge	22AWG*2	22AWG*2	22AWG*2	22AWG*2
C-FR-F23B-4,5W	20m/65 . 6ft	20m/65 . 6ft	20m/65 . 6ft	20m/65 . 6ft
C-SFR-F23B-4.5W	20m/65 . 6ft	20m/65 . 6ft	30m/98.4ft	/
C-SFR-F23B-9W	10m/32 . 8ft	10m/32 . 8ft	15m/49.2ft	/

Note

- 1. Above conclusion is based on voltage drop testing result of the light with 0.3 m (0.98ft) cable only.
- $\textbf{2.} The \, maximum \, running \, length \, is \, based \, on \, the \, designated \, \, light \, in \, static \, full \, loading \, status.$
- 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.

F23B Max. Cable Length (PVC)

Input: DC24V

			Cable Length										
Item Code	Light Length	0,32	mm²	0,52	mm²	0,81	mm²	1,32	! mm²	2,07 mm ² 14AWG			
Item code	(m)	22/	₩G	20/	AWG	184	₩G	16/	AWG				
		m	ft	m	ft	m	ft	m	ft	m	ft		
	1	101.5	332,9	164.9	541.0	256.9	842.8	418.6	1373,4	656.4	2153,7		
	2	50.9	166.9	82.7	271.2	128.8	422.4	209.8	688.4	329.1	1079.6		
irinic -	3	32.7	107.4	53.2	174.6	82.9	272.0	135.1	443.2	211.8	695.0		
	4	23.7	77.8	38.5	126.4	60.0	196.9	97.8	320.8	153.3	503.1		
C-FR-F23B-4.5W	5	18.3	59.9	29.7	97.3	46.2	151.6	75.3	247.1	118.1	387.5		
C-1 K-1 23D-4.3W	6	14.6	48.0	23.8	78.0	37.0	121.4	60.3	197.9	94.6	310.4		
	7	11.4	37.3	18.5	60.6	28.8	94.5	46.9	153.9	73.6	241.4		
	8	9.6	31.4	15.6	51.1	24.2	79 . 5	39.5	129.6	62.0	203.3		
	9	7.6	25.0	12.4	40.7	19.3	63.3	31.5	103.2	49.3	161.8		
	10	6.0	19.8	9.8	32.2	15.3	50.2	24.9	81.8	39.1	128.3		
					LEGIETT								

F23B Max. Cable Length (Silicone)

Input: DC24V

		Cable Length										
Item Code	Light Length	0.3	2 mm ²	0.5	2 mm ²	0.81	. mm²	1.32	2 mm ²	2.0	7 mm²	
Item code	(m)	22	AWG	20	AWG	18	AWG	16	AWG	14	AWG	
-2		m	ft	m	ft	m	ft	m	ft	m	ft	
C. C. LICHTING	1	114.8	376.7	186.6	612.1	290.6	953.5	473.6	1553.9	742.7	2436.8	
	2	57.4	188.3	93.3	306.1	145.3	476.8	236.8	776.9	371.4	1218.4	
	3	36.3	119.2	59.0	193.7	92.0	301.7	149.9	491.7	235.0	771.1	
	4	27.5	90.3	44,7	146.7	69.6	228.4	113.5	372.3	177.9	583.8	
	5	19.8	65.0	32.2	105.6	50.1	164.5	81.7	268.0	128.1	420.3	
	6	17,1	56.0	27.7	91.0	43,2	141.8	70.4	231.0	110,4	362.3	
 C-SFR-F23B-4.5W	7	14.4	47.4	23.5	77.0	36.5	119.9	59.5	195.4	93.4	306.3	
-3FK-F23D-4.3W	8	11.7	38.4	19.0	62.4	29.6	97.1	48.2	158.3	75.7	248.2	
	9	9.7	31.9	15.8	51.8	24.6	80.7	40.1	131.6	62.9	206.3	
	10	8.6	28.1	13.9	45.7	21.7	71.2	35.4	116.0	55.5	182.0	
	11	6.8	22.2	11.0	36.0	17.1	56.1	27.9	91.4	43.7	143.3	
	12	6.0	19.6	9.7	31.9	15.1	49.7	24.7	80.9	38.7	126.9	
	13	4.9	16.0	7.9	26.0	12.3	40.5	20.1	66.0	31.5	103.5	
	14	4.2	13.7	6.8	22.2	10.5	34.6	17.2	56.4	27.0	88.4	
	15	3.2	10.5	5.2	17.0	8.1	26.5	13.2	43,2	20.7	67.8	
	1	57.4	188.3	93.3	306.1	145.3	476.8	236.8	776.9	371.4	1218.4	
	2	28.7	94.2	46.6	153.0	72.7	238.4	118.4	388.5	185.7	609.2	
	3	18.2	59.6	29.5	96.8	46.0	150.9	74.9	245.8	117.5	385.5	
 SFR-F23B-9W	4	13.8	45.1	22.4	73.3	34.8	114.2	56.7	186.1	89.0	291.9	
WE-GC3 I-N IC	5	9.9	32.5	16.1	52.8	25.1	82.2	40.8	134.0	64.1	210.2	
	6	8.5	28.0	13.9	45.5	21.6	70.9	35.2	115.5	55.2	181.1	
	7	7.2	23.7	11.7	38 . 5	18.3	59.9	29.8	97.7	46.7	153.2	
	7.5	5.8	19.2	9.5	31.2	14.8	48.6	24.1	79.1	37.8	124.1	

 $Single-end feed, C-FR-F23B-4.5W, 5m \ light length \ with \ 22AWG \ wire, \ max. \ cable length \ should \ refer to the corresponding \ value 18.3m \ for \ 5m \ light length;$

Double-end feed, C-FR-F23B-4.5W, 10m light length with 22AWG wire, max, cable length of each end should refer to the corresponding value 18.3m for half of light length <math>5m; and 5m for half of light length 5m; and 5m for half of light length 5m for half of

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

