Haz-Flex

Flexible LED Strip Light

HFX Series

IECEx ⟨Ex⟩

Specification
Sheet

FME Lighting | ILLUMINATING INDUSTRIAL APPLICATIONS
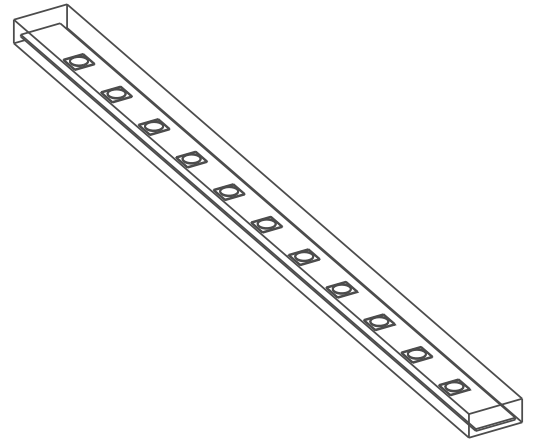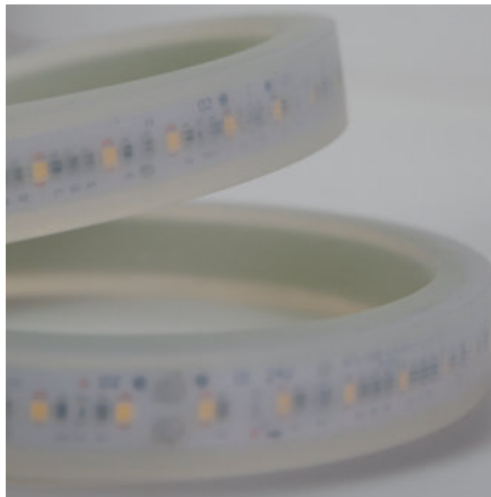
Table of Contents

Introduction

Haz-Flex range of LED hazardous area lighting products are an innovative range of flexible strip lights that have been designed specifically for use in potentially explosive atmospheres (Class I Division 2 Groups A, B, C,D) and harsh/rugged environments. .

The products covered in this specification are for ceiling, wall and surface mounts. Haz-Flex LED Low Voltage Flexible Light are designed for damp/wet locations with it's IP67 water protection rating combine with a impact resistance rating of IK10 Haz-Flex is designed in accordance with the Canadian Electrical Code, Part I (CEC), CSA C22.1, with the U.S. National Electrical Code (NEC), ANSI/NFPA 70 and other local codes.

The Haz-Flex white strip light can be used to provide daylight spectrum light for continuous lit areas or be used to light specific equipment where white, Red, Green, or Amber. versions are designed for use as part of a safety system.

The Haz-Flex strip lights have a long-life span (50,000 hours plus), low energy consumption, and are highly energy efficient.

| D:300mm					5 Year
Bending Diameter	UV Resistant	Solvents Resistant	Saltwater Resistant	IP67 Protection	Warranty

1. Functions & Features

1.1 Product Features

1. High quality and high brightness SMD LED chip.

2. Variety of monochromatic lightsfor option including White ,Red,Green,Amber.

3. UV resistant construction.

4. Power range 2.5W to 100w.

5. High color consistency& uniformity. 6.Rated input voltage 48v,36v,24v DC.

7. Injection molded silicone front connector and end cap.

8. IP67 (Damp/Wet) Location.

9. Environmentally friendly & energy efficient.

10. Automated production, high reliability & long warranty.

11. Long-life span (50,000 hours+).

1.2 Minimum Bend Diameter
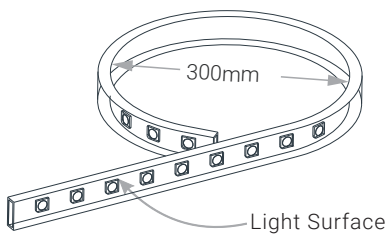
The light can only be bent along the light surface.
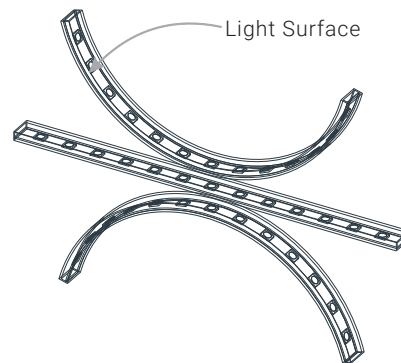
Do not bend smaller than allowed minimum bend diameter.

2.Technical Data

2.1 Haz-Flex LED flex linear light

Rating	Class I Division 2 Groups A, B, C,D
Operating temperature range	-25°C~55°C
Dimension	W20mm*H10mm
service environment	IP67 (Damp/Wet) Location
Impact strength	IK10
Standards	UL 844 , CSA C22.2# 137
Weight	285g/m

3. System Components

3.1 Haz-Flex LED Flex Linear Light

3.1.1 Dimension

Cross Section of Light (mm)
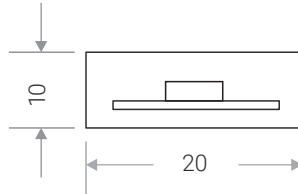
Item	Figure	Description
Injection-moulded Front Connector(top end)		Connect light to power supply with pre-installed front feed cable, IP67.
Injection-moulded End Cap		Pre-installed termination protection of the light, IP67.

Note: Unlessotherwise stated, the tolerance of the connector is±0.5mm.

3. System Components Cont.

Note: The following wiring diagrams are applicable to DC-type of Heavy Duty or Hazardous location applications.

3.1.2 Exploded-view Diagram

No.	Part name	No.	Part name
①	Enclosure (Options for Hazardous-rated & standard industry rated)	⑦	Terminal block
②	¾" Hub	⑧	Conduit
③	Grounding terminal	⑨	Input power cord of the LED power supply
④	Back panel	⑩	Output cord of the LED power supply
⑤	Fastening screw	⑪	HFX-C1D2-CONNECTOR
⑥	LED power supply (Class 1, Div 2 Haz-Location)	⑫	Haz-Flex

a. Method 1 - Wiring Example: Utilizing a conduit system

Single Driver Box - When the enclosure contains only one power supply inside, the power supply is allowed to drive lights up to 240W in total.
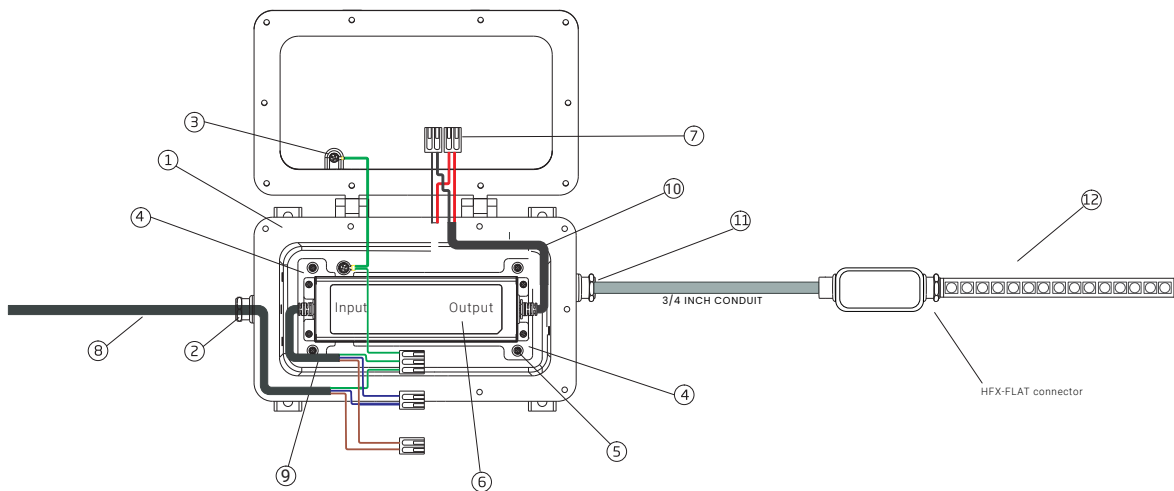
b. Method 2 - Exposed Cable System

Double Driver Box - In the case the enclosure contains two power supplies, each is only allowed to drive lights up to 180W.
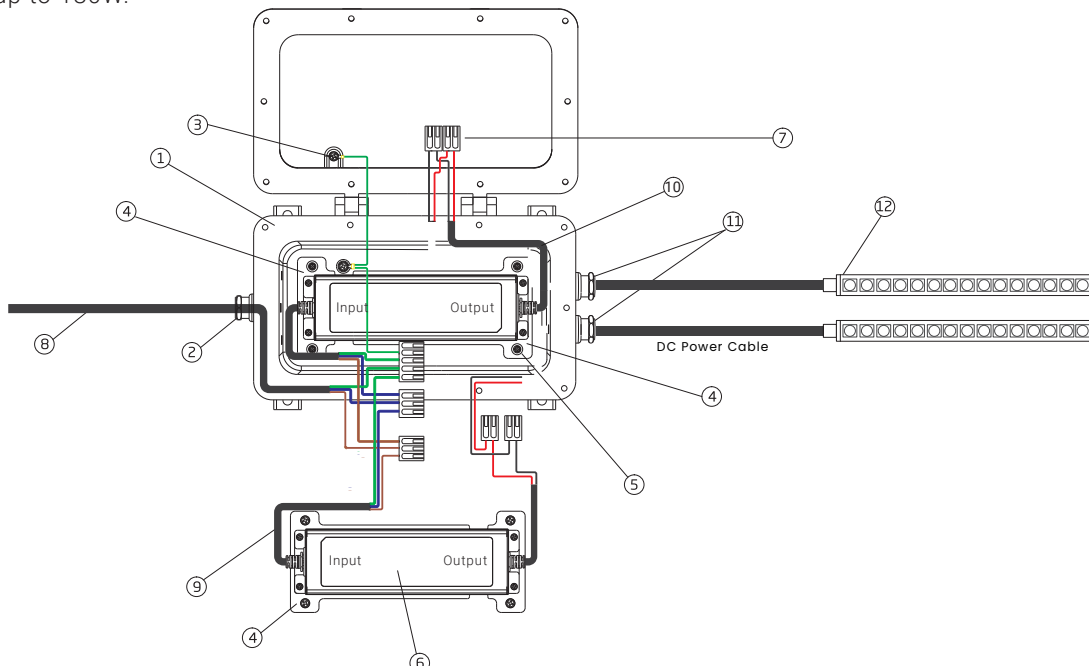
Please conform with local inspector that cabling and conduit meets code requirements

3.1.3 Product Nomenclature

Example:

HFX – A-DC – 84 – SD – W – 16

Series	Voltage	LEDs/meter	CCT	Light Color	Light Length (meters)

HFX
Class 1
Division 2
Groups A,B,C,D

Series	Voltage	LEDs/meter	CCT			Light Color			Light Length (meters)
	A = 24V DC	84	SD	=	6500K	W	=	White	
		70	S	=	3000K	R	=	Red	
		56	I	=	4000K	G	=	Green	
		42	C	=	5000K	A	=	Amber	
	B = 36V DC	88	SD	=	6500K	W	=	White	See Light Length Chart
		66	S	=	3000K	R	=	Red	
		44	I	=	4000K	G	=	Green	
		22	C	=	5000K	A	=	Amber	
	C = 48V DC	84	SD	=	6500K	W	=	White	
			S	=	3000K	R	=	Red	
		56	I	=	4000K	G	=	Green	
		28	C	=	5000K	A	=	Amber	

Light Length Chart: Light Length corresponds to the values the chart

A

Max Run Length	LEDs/meter	Light Color	Rated Power
8m (24.2ft)	84	White	Max.96W
10m (32.8ft)	84	Red/Green/Amber	Max.100W
10m (32.8ft)	70	White	Max.100W
12m (39.4ft)	70	Red/Green/Amber	Max.100W
12m (39.4ft)	56	White	Max.96W
15m (49.2ft)	56	Red/Green/Amber	Max.100W
16m (52.5ft)	42	White	Max.96W
20m (65.6ft)	42	Red/Green/Amber	Max.100W

B

Max Run Length	LEDs/meter	Light Color	Rated Power
8m (24.2ft)	88	White	Max.96W
10m (32.8ft)	88	Red/Green/Amber	Max.100W
11m (36.1ft)	66	White	Max.99W
13m (42.7ft)	66	Red/Green/Amber	Max.97.5W
16m (52.5ft)	44	White	Max.96W
20m (65.6ft)	44	Red/Green/Amber	Max.100W
32m (105ft)	22	White	Max.96W
40m (131.2ft)	22	Red/Green/Amber	Max.100W

C

Max Run Length	LEDs/meter	Light Color	Rated Power
8m (24.2ft)	84	White	Max.96W
10m (32.8ft)	84	Red/Green/Amber	Max.100W
12m (39.4ft)	56	White	Max.96W
15m (49.2ft)	56	Red/Green/Amber	Max.100W
25m (82ft)	28	White	Max.100W
30m (98.4ft)	28	Red/Green/Amber	Max.100W

Notes:

- Longer lengths are available at lower wattage, please contact manufacture for inquiries.
- If UL 844 is not required, longer lengths are available, please contact manufacture for inquiries.
- Each strip is cut to length at the factory. Strips can be shorten in the field. A silicone cap is available to install after length is adjusted.
- Field modification cannot be done on the power feed side of the LED strip, or else UL 844 certification will be void.

Ordering Information

HFX – -DC – ▢ – ▢ – ▢ – ▢ – ▢

Series	Voltage	LEDs/meter	CCT			Light Color			Light Length (meters)	Options		
										DC Feed Cable		
	A = 24V DC	84	SD	=	6500K	W	=	White				
		70	S	=	3000K	R	=	Red		N/A	=	50cm (19.7")
		56	I	=	4000K	G	=	Green		1	=	1 meter (3.28')
		42	C	=	5000K	A	=	Amber		2	=	2 meter (6.56')
HFX Class 1 Division 2 *Groups A,B,C,D*	B = 36V DC	88	SD	=	6500K	W	=	White	See Light Length Chart	3	=	3 meter (9.84')
		66	S	=	3000K	R	=	Red		C	=	Custom Length
		44	I	=	4000K	G	=	Green				
		22	C	=	5000K	A	=	Amber				
	C = 48V DC	84	SD	=	6500K	W	=	White				
			S	=	3000K	R	=	Red				
		56	I	=	4000K	G	=	Green				
		28	C	=	5000K	A	=	Amber				

*The DC Power cable comes at standard length is 50cm (19.7in). Custom lengths are done at cost per meter, please note desired length in ordering information under options

3.1.4 Optical Parameters of Light

Certification Model	LED QTY/m	Lumen /m	Rated power/m	Light Color	LED QTY/unit	Length /unit	DC Power Cable length	Max. run length @mb	Rated Current (A/m)	PF	UL-844 Rated
HFX-C-DC-84-SD-W-8	84	1000lm	12W	White	14	16.7cm (6.6in)	50 cm (19.7in)	8m (24.2ft)	0.25	1	✓
HFX-C-DC-84-SD-A-10	84	320lm	10W	Amber	14	16.7cm (6.6in)	50 cm (19.7in)	10m (32.8ft)	0.21	1	✓
HFX-C-DC-84-SD-G-10	84	850lm	10W	Green	14	16.7cm (6.6in)	50 cm (19.7in)	10m (32.8ft)	0.21	1	✓
HFX-C-DC-84-SD-R-10	84	340lm	10W	Red	14	16.7cm (6.6in)	50 cm (19.7in)	10m (32.8ft)	0.21	1	✓
HFX-C-DC-56-SD-W-12	56	660lm	8W	White	14	25cm (9.8in)	50 cm (19.7in)	12m (39.4ft)	0.17	1	✓
HFX-C-DC-56-SD-A-15	56	210lm	6.67W	Amber	14	25cm (9.8in)	50 cm (19.7in)	15m (49.2ft)	0.14	1	✓
HFX-C-DC-56-SD-G-15	56	560lm	6.67W	Green	14	25cm (9.8in)	50 cm (19.7in)	15m (49.2ft)	0.14	1	✓
HFX-C-DC-56-SD-R-15	56	220lm	6.67W	Red	14	25cm (9.8in)	50 cm (19.7in)	15m (49.2ft)	0.14	1	✓
HFX-C-DC-28-SD-W-25	28	330lm	4W	White	14	50 cm (19.7in)	50 cm (19.7in)	25m (82ft)	0.08	1	✓
HFX-C-DC-28-SD-A-30	28	100lm	3.33W	Amber	14	50 cm (19.7in)	50 cm (19.7in)	30m (98.4ft)	0.07	1	✓
HFX-C-DC-28-SD-G-30	28	280lm	3.33W	Green	14	50 cm (19.7in)	50 cm (19.7in)	30m (98.4ft)	0.07	1	✓
HFX-C-DC-28-SD-R-30	28	110lm	3.33W	Red	14	50 cm (19.7in)	50 cm (19.7in)	30m (98.4ft)	0.07	1	✓
HFX-B-DC-88-SD-W-8	88	1000lm	12W	White	11	12.5cm (5in)	50 cm (19.7in)	8m (24.2ft)	0.33	1	✓
HFX-B-DC-88-SD-A-10	88	330lm	10W	Amber	11	12.5cm (5in)	50 cm (19.7in)	10m (32.8ft)	0.28	1	✓
HFX-B-DC-88-SD-G-10	88	900lm	10W	Green	11	12.5cm (5in)	50 cm (19.7in)	10m (32.8ft)	0.28	1	✓
HFX-B-DC-88-SD-R-10	88	330lm	10W	Red	11	12.5cm (5in)	50 cm (19.7in)	10m (32.8ft)	0.28	1	✓
HFX-B-DC-66-SD-W-11	66	750lm	9W	White	11	16.7cm (6.6in)	50 cm (19.7in)	11m (36.1ft)	0.25	1	✓
HFX-B-DC-66-SD-A-13	66	250lm	7.5W	Amber	11	16.7cm (6.6in)	50 cm (19.7in)	13m (42.7ft)	0.21	1	✓
HFX-B-DC-66-SD-G-13	66	670lm	7.5W	Green	11	16.7cm (6.6in)	50 cm (19.7in)	13m (42.7ft)	0.21	1	✓
HFX-B-DC-66-SD-R-13	66	250lm	7.5W	Red	11	16.7cm (6.6in)	50 cm (19.7in)	13m (42.7ft)	0.21	1	✓
HFX-B-DC-44-SD-W-16	44	500lm	6W	White	11	25cm (9.8in)	50 cm (19.7in)	16m (52.5ft)	0.17	1	✓
HFX-B-DC-44-SD-A-20	44	170lm	5W	Amber	11	25cm (9.8in)	50 cm (19.7in)	20m (65.6ft)	0.14	1	✓
HFX-B-DC-44-SD-G-20	44	450lm	5W	Green	11	25cm (9.8in)	50 cm (19.7in)	20m (65.6ft)	0.14	1	✓
HFX-B-DC-44-SD-R-20	44	170lm	5W	Red	11	25cm (9.8in)	50 cm (19.7in)	20m (65.6ft)	0.14	1	✓
HFX-B-DC-22-SD-W-32	22	250lm	3W	White	11	50 cm (19.7in)	50 cm (19.7in)	32m (105ft)	0.08	1	✓
HFX-B-DC-22-SD-A-40	22	80lm	2.5W	Amber	11	50 cm (19.7in)	50 cm (19.7in)	40m (131.2ft)	0.07	1	✓
HFX-B-DC-22-SD-G-40	22	220lm	2.5W	Green	11	50 cm (19.7in)	50 cm (19.7in)	40m (131.2ft)	0.07	1	✓
HFX-B-DC-22-SD-R-40	22	80lm	2.5W	Red	11	50 cm (19.7in)	50 cm (19.7in)	40m (131.2ft)	0.07	1	✓
HFX-A-DC-84-SD-W-8	84	1000lm	12W	White	7	8.3cm (3.27in)	50 cm (19.7in)	8m (24.2ft)	0.50	1	✓
HFX-A-DC-84-SD-A-10	84	350lm	10W	Amber	7	8.3cm (3.27in)	50 cm (19.7in)	10m (32.8ft)	0.42	1	✓
HFX-A-DC-84-SD-G-10	84	880lm	10W	Green	7	8.3cm (3.27in)	50 cm (19.7in)	10m (32.8ft)	0.42	1	✓
HFX-A-DC-84-SD-R-10	84	310lm	10W	Red	7	8.3cm (3.27in)	50 cm (19.7in)	10m (32.8ft)	0.42	1	✓
HFX-A-DC-70-SD-W-10	70	810lm	10W	White	7	10.0cm (3.9in)	50 cm (19.7in)	10m (32.8ft)	0.42	1	✓
HFX-A-DC-70-SD-A-12	70	290lm	8.33W	Amber	7	10.0cm (3.9in)	50 cm (19.7in)	12m (39.4ft)	0.35	1	✓
HFX-A-DC-70-SD-G-12	70	730lm	8.33W	Green	7	10.0cm (3.9in)	50 cm (19.7in)	12m (39.4ft)	0.35	1	✓
HFX-A-DC-70-SD-R-12	70	260lm	8.33W	Red	7	10.0cm (3.9in)	50 cm (19.7in)	12m (39.4ft)	0.35	1	✓
HFX-A-DC-56-SD-W-12	56	660lm	8W	White	7	12.5cm (5in)	50 cm (19.7in)	12m (39.4ft)	0.33	1	✓
HFX-A-DC-56-SD-A-15	56	230lm	6.67W	Amber	7	12.5cm (5in)	50 cm (19.7in)	15m (49.2ft)	0.28	1	✓
HFX-A-DC-56-SD-G-15	56	580lm	6.67W	Green	7	12.5cm (5in)	50 cm (19.7in)	15m (49.2ft)	0.28	1	✓
HFX-A-DC-56-SD-R-15	56	200lm	6.67W	Red	7	12.5cm (5in)	50 cm (19.7in)	15m (49.2ft)	0.28	1	✓
HFX-A-DC-42-SD-W-16	42	500lm	6W	White	7	16.7cm (6.6in)	50 cm (19.7in)	16m (52.5ft)	0.25	1	✓
HFX-A-DC-42-SD-A-20	42	170lm	5W	Amber	7	16.7cm (6.6in)	50 cm (19.7in)	20m (65.6ft)	0.21	1	✓
HFX-A-DC-42-SD-G-20	42	440lm	5W	Green	7	16.7cm (6.6in)	50 cm (19.7in)	20m (65.6ft)	0.21	1	✓
HFX-A-DC-42-SD-R-20	42	150lm	5W	Red	7	16.7cm (6.6in)	50 cm (19.7in)	20m (65.6ft)	0.21	1	✓

3.2 Power supply requirements

Lights are for use in Hazardous locations and supplied by SELV power unit that are intended for installation adjacent circuits of 600 V nominal or less between conductors in accordance with the Canadian Electrical Code, Part I (CEC), CSA C221. With the U.S. National Electrical Code (NEC) ansunfpa 70 and other local codes.
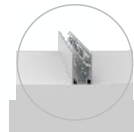
4. Mounting Profiles

4.1 Stainless Steel Channel
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Engineered for the safe and quick installation of Haz-Flex Explosion-Proof LED Strip. The Haz-Flex LED strip fits firmly in the channel, preventing it from falling off the mounting track when vibration occurs.

Accessories are available for either screw mounting or strap mounting. The channel and accessories, are made of corrosive resistant 316L stainless steel, and has been salt spray tested.
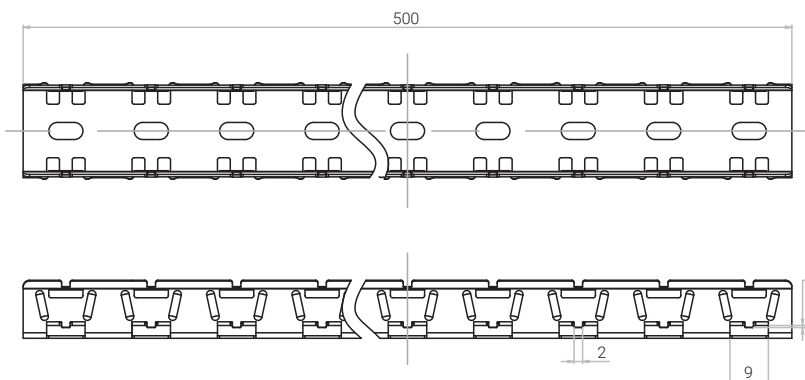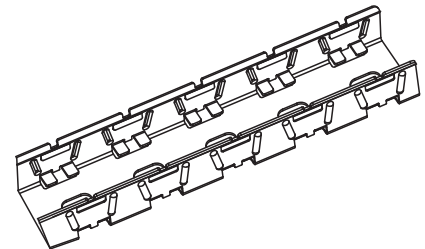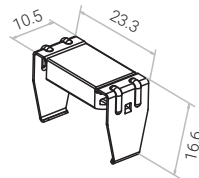

Please refer to installation instructions.

Test Object	No.	Experiment Item	Standard
Metal Parts	1	Weather Resistance: Salt Spray Tested	IEC68-2-11
Mounting profile	2	Clamping force	Haz-Flex-defined

Dimension: mm
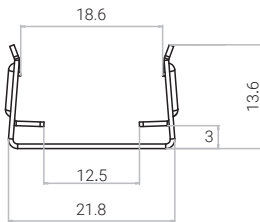
Tolerance: ±0.2mm

ItemCode	Standard Length	Slotted Hole
HFX-Channel	500mm/19.68in	4*10mm/0.16*0.39in

Installation Instructions

Components:

| Stainless Steel Mounting Track | Stainless Steel Cable Tie (silicone anti-skidding sleeve included) | Joining Bracket | Clip (silicone protective sleeve included) | Screw |

> **Step 1**   Profile Coupling

Connect at most 3 pieces

Face Up
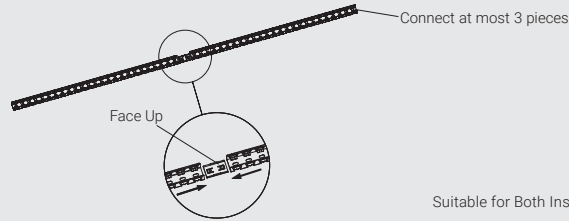
Suitable for Both Installation Ways

Installation Way ① Screw Mounting

> **Step 2**

Wall
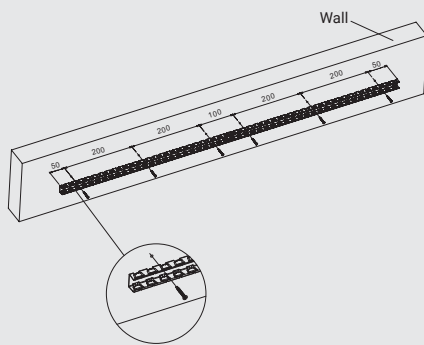
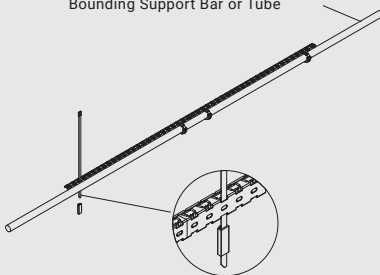Mark the mounting positions and tighten the screws.

> **Step 3**

Light Emitting Surface
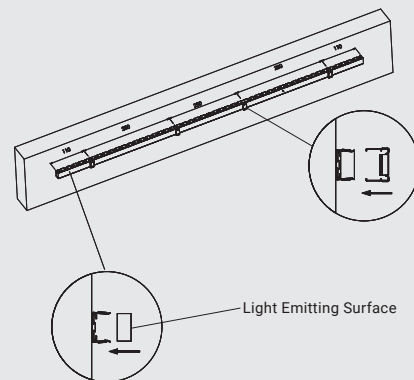
Put the light in and fix it in postion with the clip.

Installation Way ② Strap Mounting

> **Step 2**

Bounding Support Bar or Tube

Thread the strap through the mounting track and then cover it with silicone anti-skidding sleeve. Pay attention to the direction when strapping it in.

> **Step 3**

Lift the handle and cut the excess cable tie.
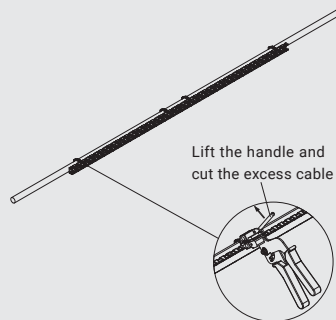
Insert the cable tie into the strap wrench. Then press the wrench tightly and take care not to damage to the track.

> **Step 4**

Light Emitting Surface
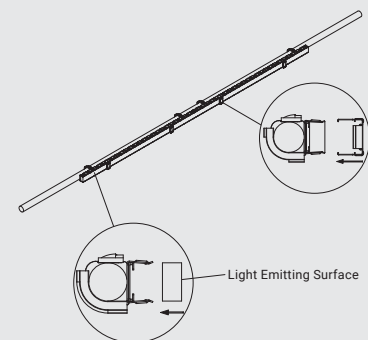
Put the light in and fix it in postion with the clip.

4.2 Suspension Kit

This simple but useful device for suspension lighting, the flexible design allows of screw-less installations. making it portable and reusable. The mounting height is adjustable by positioning the bolt and cutting to length.
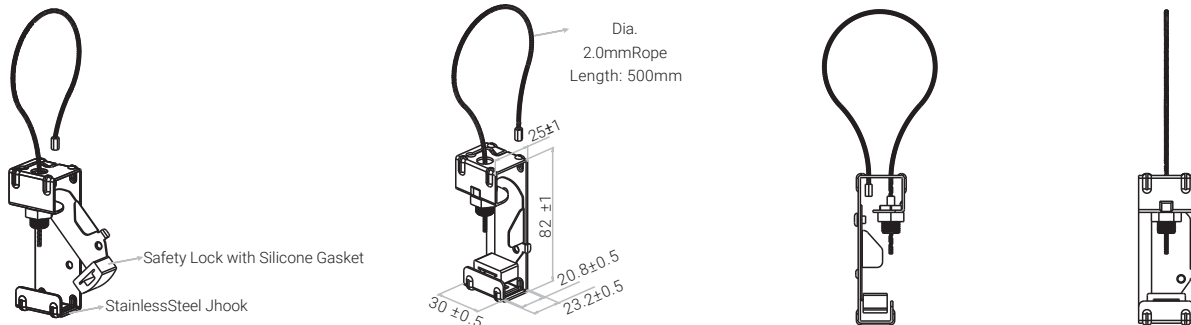
The bracket is made with corrosive resistant 316 stainless steel, and has been salt spray tested.
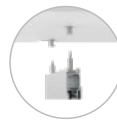
Please refer to the installation instructions.

| Test Object	No.	Experiment Item	Standard
Metal Parts	1	Weather Resistance: Salt Spray Tested	IEC68-2-11
Mounting profile	2	Clamping force	Haz-Flex-defined

Dimension: mm

Safety Lock with Silicone Gasket

StainlessSteel Jhook

Dia. 2.0mmRope Length: 500mm

25±1
82 ±1
20.8±0.5
30 ±0.5
23.2±0.5

ItemCode
HFX-S/KT

Installation Instructions

Please read instructions carefully before use.

Step 1

Light Emitting Surface Facing Downwards
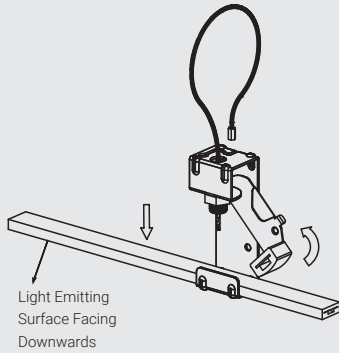
Rotate the safety lock outwards and put the LED strip in the J-hook.

Step 2

Rotate back in place till a "click" sound
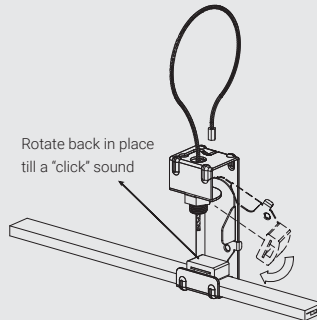
Rotate the safety lock back to press the led strip in tightly.

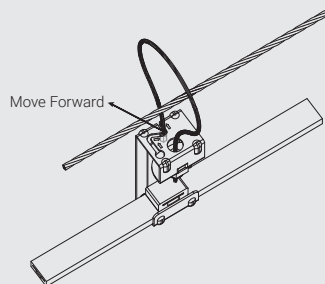## Step 3

Support
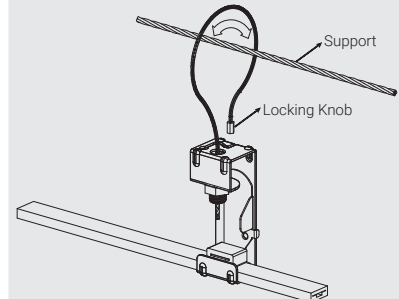
Locking Knob

Wind the wire rope with the locking knob around the support.
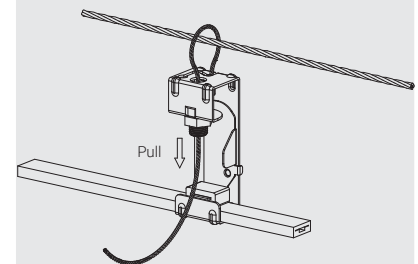
Step 4
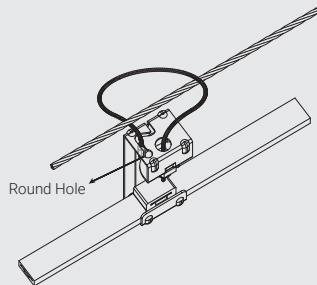
Round Hole

Thread the locking knob of wire rope through the round hole.
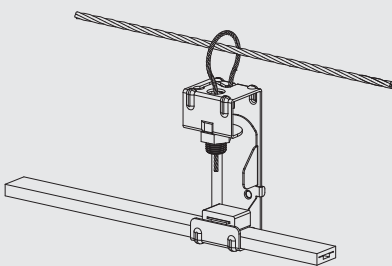
Step 5

Move Forward

Move the wire rope forward to the end along with the arrows aside.

Step 6

Pull

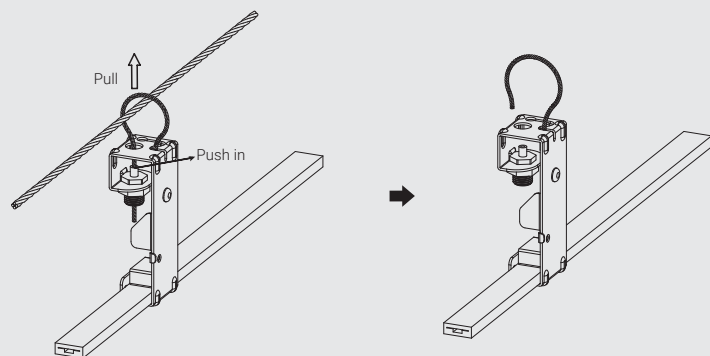Pull the wire rope to adjust the height as desired.

Step 7

Cut or roll the excess wire rope.

NOTE: The recommended quantity is 3pcs for every meter or adjustable based on the specific case.

Tip

Pull

Push in

Push in the plunger of cable gripper to pull out the wire rope if needed.

6. Appendix

6.1 Certifications of Light

Explosion-proof Regulation Compliance

Certification Authority-TUV

- EU-TYPE EXAMINATION CERTIFICATE of Equipment or Protective System intended of use in potentially explosive atmospheres as per Directive 2014/34/EU.
  Certificate Number TUV IT 19 ATEX 086 X of compliance with EN IEC60079-0; IEC60079-18;EN 60079-28.

- PRODUCTION QUALITY ASSURANCE NOTIFICATION of Equipment to be used in potentially explosive atmospheres as per Directive 2014/34/EU Notification Number TUV IT 19 ATEX 087Q.

- IECEx CERTIFICATE of CONFORMITY of Equipment intended of use in potentially explosive atmospheres.
  Certificate Number: IECEx TPS 19.0047 X of compliance with IEC60079-0; IEC60079-18

Low Voltage Device Compliance

Certification Authority-SGS

- CE VERIFICATION of LVD COMPLIANCE of Haz-Flex LED Flexible Strip Light as per relevant ECDirectives.
  Verification Number GZES2012034953LMof compliance with EN60598-1; EN 60598-2-21; EN 62493.

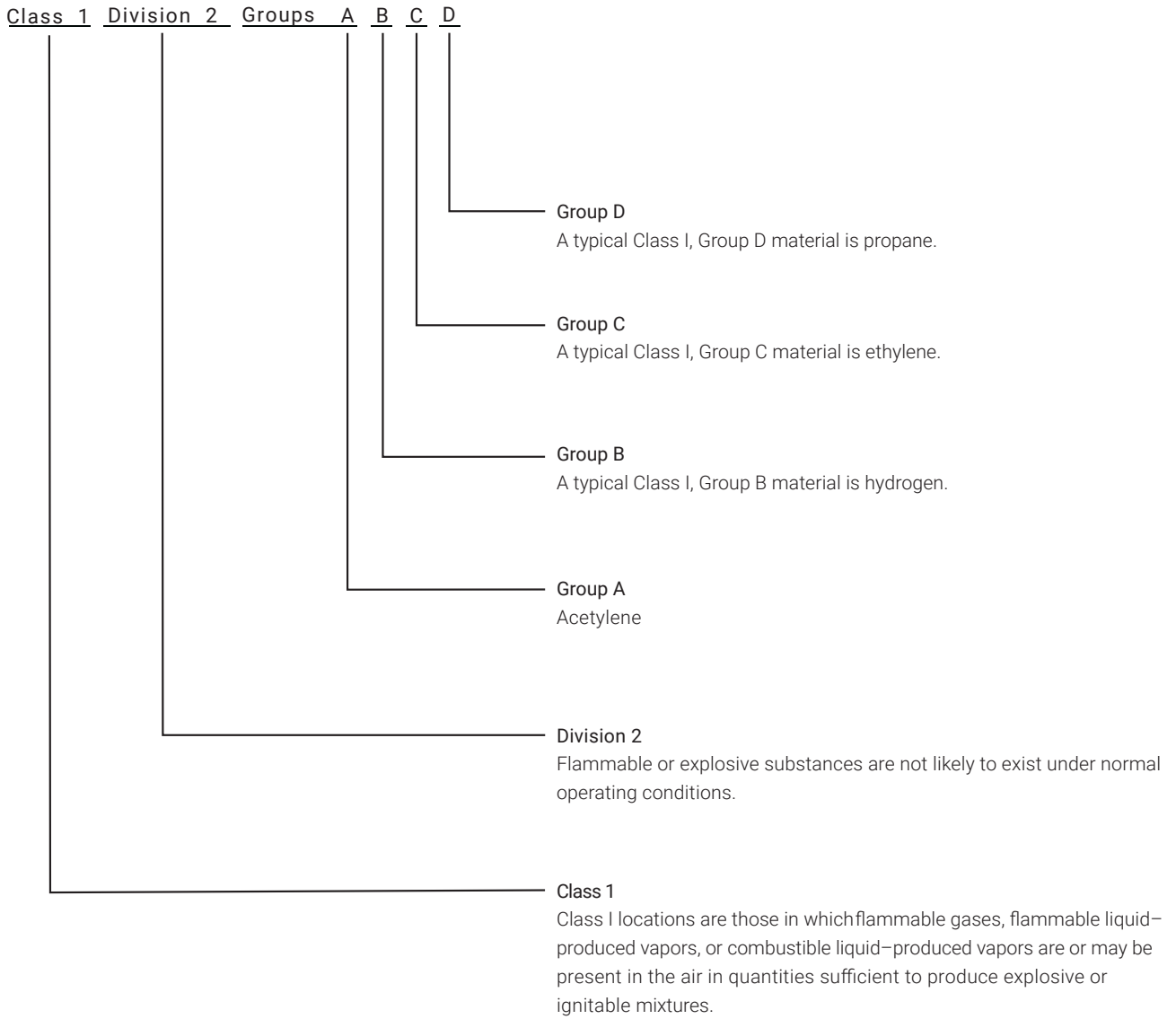### EMC Compliance

Certification Authority-SGS

- VERIFICATION of EMCCOMPLIANCE of Haz-Flex LED Flexible strip Light as per Directive 2014/30/EU.
  Verification Number **GZEM2106003865LMV** of compliance with EN55015; EN61547; EN61000-3-2;EN61000-3-3.

ROHS Compliance

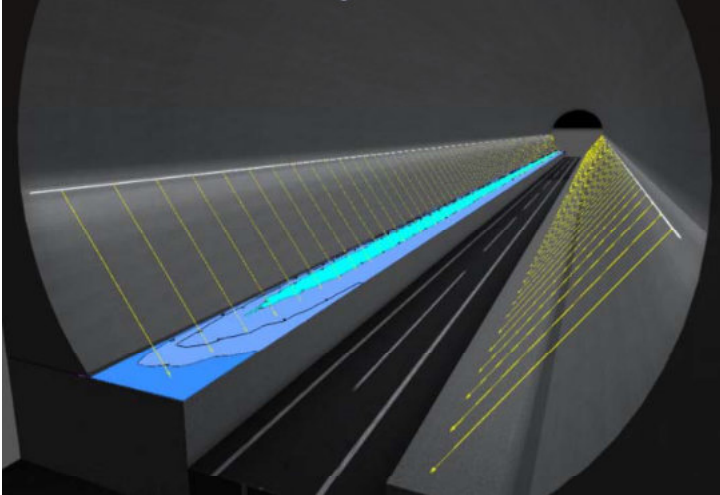#### Certification Authority-SGS

- VERIFICATION of RoHS COMPLIANCE of Haz-Flex LED Flexible Strip Light as per RoHS Directive EU 2015/863 amending 2011/65/EU. Certification Authority - SGS

6.2 UL 844 Explanation

Class 1   Division 2   Groups   A   B   C   D

Group D
A typical Class I, Group D material is propane.

Group C
A typical Class I, Group C material is ethylene.

Group B
A typical Class I, Group B material is hydrogen.

Group A
Acetylene

Division 2
Flammable or explosive substances are not likely to exist under normal operating conditions.

Class 1
Class I locations are those in which flammable gases, flammable liquid–produced vapors, or combustible liquid–produced vapors are or may be present in the air in quantities sufficient to produce explosive or ignitable mixtures.
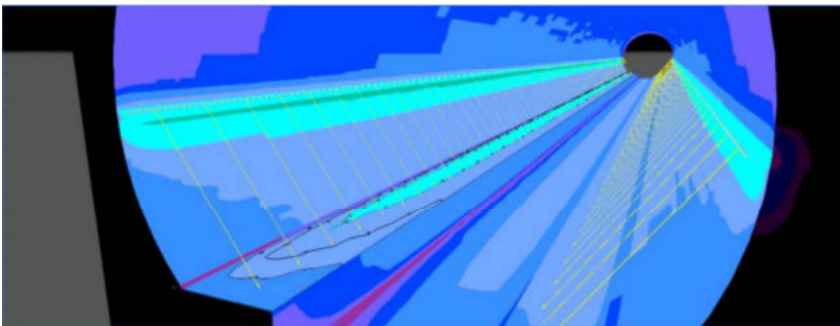
7. Light Distribution

Tunnel Illumination Example
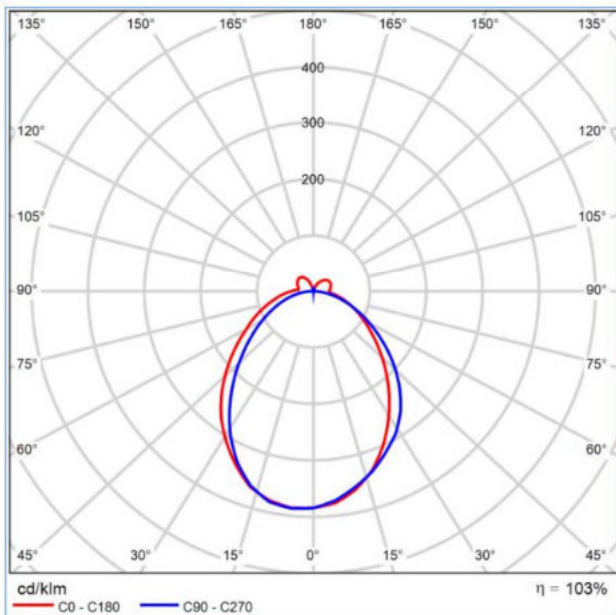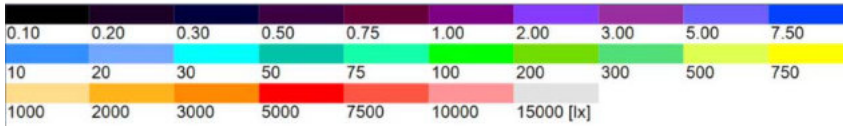

Tunnel Illumination Example

- Height of tunnel: 6 meters

- Installation position: 3.75 meters high

- Lumen target: 3.8 lux at ground level.

Product Solution

Solution:

- 3W, 22LEDs/m, DC36V

0.10	0.20	0.30	0.50	0.75	1.00	2.00	3.00	5.00	7.50
10	20	30	50	75	100	200	300	500	750
1000	2000	3000	5000	7500	10000	15000 [lx]			

Simulated data		
Position	Average brightness	Average lux
WALK WAY	1.25cd	22.3lx
CAR WAY	0.27cd	7.67lx
WAY 3	0.30cd	5.34lx