

Outdoor Rigid Light

LRO

Luci EFRO IP65

Color management
MacAdam 3 step

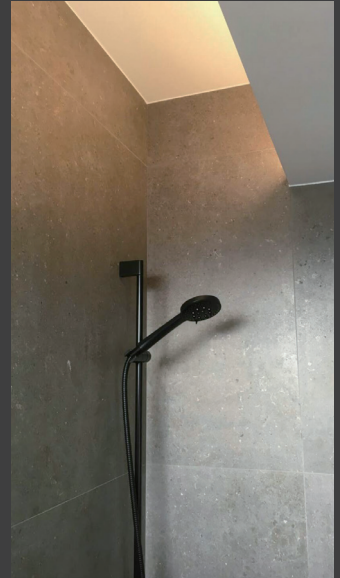


- Dot-free surface for reflective surface material
- High efficacy LED package with 3 steps Macadam
- 5 color variations
- 5 length variations
- Optional aluminium channel for wall mounting

LRO

Luci EFRO IP65

NEW



Y's Residence
Location: Japan
Architect office: Daisuke Chugun Architect & Associates
Lighting Design: ILLUMINATION OF CITY ENVIRONMENT

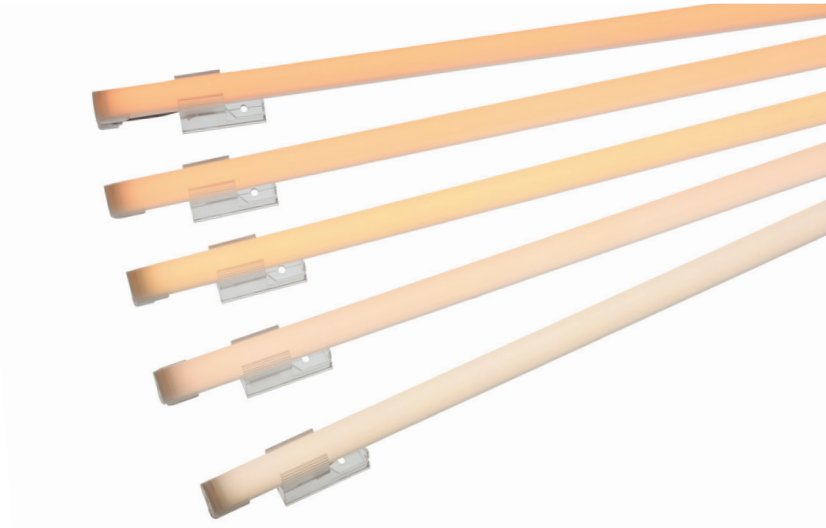
CLIO Komazawakouen show room
Location: JAPAN
Owner: MEIWA ESTATE CO., LTD.
Interior design: KAN DESIGNING OFFICE LTD.
Lighting design office: WORKTECH CORPORATION
Construction: ONE DESIGNS Co.,Ltd.

BANK
Location: Japan
Architect office: Mitsubishi Jisho Sekkei Inc.



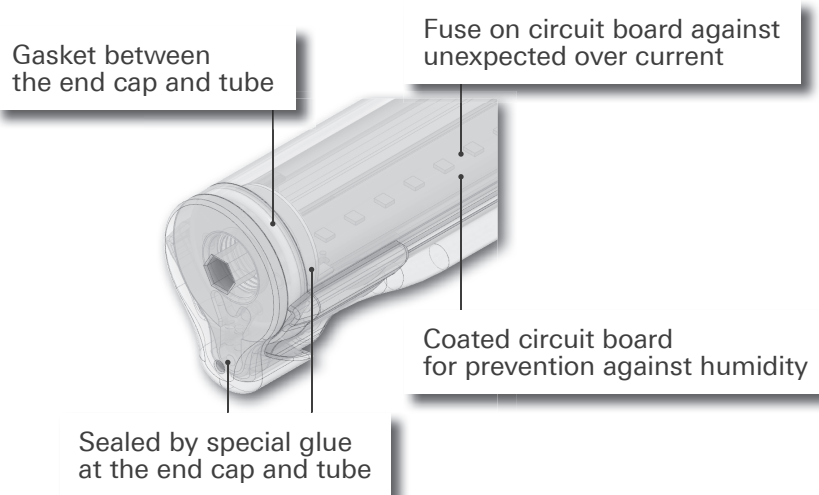
Harbourview Hotel at Macau Fisherman's Wharf
Location: Macau
Architect office: Phoenix Entertainment Design Company Ltd.
Lighting design: Lightsource (Intl) Asia Ltd
Lighting Supplier: Lumen Arts Ltd





Meticulous structural design for humidity-resistance will provide assurance of electrical safety in bathrooms and semi-outdoor

Safety and waterproofing structure



- Dot-free surface for reflective surface material

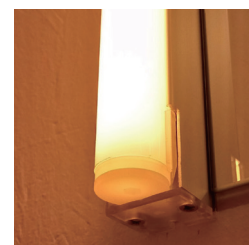
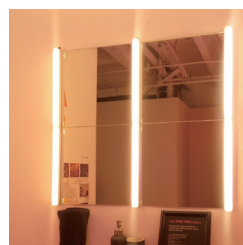
- High efficacy LED package with 3 steps Macadam
607 lm/m, 8.4 W/m in 2700K, Ra>93

- 5 color variations
4200K, 3500K, 3000K, 2700K, 2400K

- 5 length variations
162 mm, 302 mm, 582 mm, 862 mm, 1142 mm

- Optional aluminium channel for wall mounting

Ideal for vanity lighting purposes with high colour rendering and smooth lighting distribution



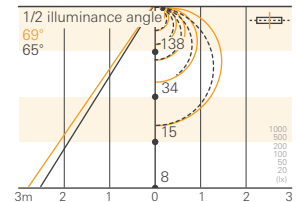


Model No.

Light Intensity

LRO	-	*	-	*	-	DF	-	IW
Product Name	-	Length	-	Light source color	-	Cover type	-	Environment
		0162 0302 0582 0862 1142		W : White WW : Warm white 3500K L30 : Warm white 3000K L27 : Warm white 2700K L24 : Warm white 2400K		DF : Diffuser		IW : IP65 (Indoor / Semi-outdoor)

LRO-1142-L27-DF-IW



Specification

Length	0162	0302	0582	0862	1142
Model No.	LRO-0162- *-DF-IW	LRO-0302- *-DF-IW	LRO-0582- *-DF-IW	LRO-0862- *-DF-IW	LRO-1142- *-DF-IW
Power consumption	1.2W	2.4W	4.8W	7.2W	9.6W
Fitting length(L)	162mm	302mm	582mm	862mm	1142mm
Weight	62g	100g	172g	234g	310g
Luminaire efficacy(2700K)	90.3 lm/W	90.3 lm/W	90.3 lm/W	90.3 lm/W	90.3 lm/W
Light source color ○ = Device inventory * = Equivalent					
D 7100K	-	-	-	-	-
N 5300K	-	-	-	-	-
W 4200K Ra94	○ 100 lm*	○ 201 lm*	○ 401 lm*	○ 602 lm	○ 802 lm*
WW 3500K Ra94	○ 95 lm*	○ 191 lm*	○ 381 lm*	○ 572 lm	○ 862 lm*
L30 3000K Ra93	○ 86 lm*	○ 172 lm*	○ 344 lm*	○ 516 lm	○ 688 lm*
L27 2700K Ra93	○ 87 lm*	○ 174 lm*	○ 349 lm*	○ 523 lm	○ 697 lm*
L24 2400K Ra94	○ 83 lm*	○ 166 lm*	○ 331 lm*	○ 497 lm	○ 662 lm*
L19 1900K	-	-	-	-	-

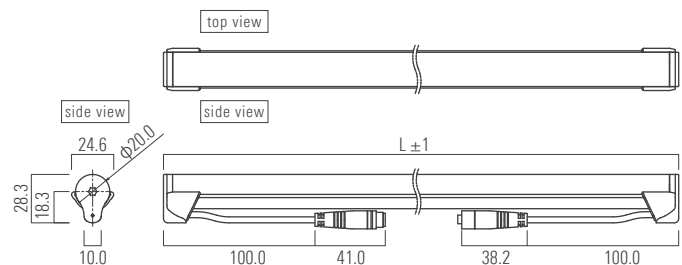
Specification may be subject to change without announcement.
The optical data provided on the each product pages are for reference only; the data values are not guaranteed. Please use as reference materials for your planning.

General Specification

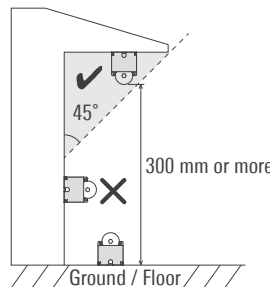
Input voltage	DC24V
Environment	Bathroom, semi-outdoor, Moistureproof (IP65) ^{*1}
Max. length per circuit	4.5m
Material (body)	Polycarbonate, PVC cable, IP65 connector
Material (cover, clip)	Polycarbonate
Material (mounting rail)	Aluminum
Attachments	① Mounting clip 2pcs for 582mm or shorter 3pcs for 862mm or longer
Option parts	① Mounting clip ② Aluminum mounting rail ③ Power supply cable
Certification	CE, Complied with JIS0920, IP65
Operating temperature	0°C ~ +35°C (No Condensation)
Dimmable	○
Power Supplies	Required

*1 Installing in a sauna, bathroom/shower room operated 24 hours a day is not allowed.

External dimensions



Prohibited installation places

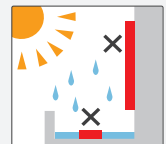


When using EFRO in semi-outdoor, it must be installed with the aluminum rail for EFRO. Please installed the LED fixture and the cable within the range of 45° eaves of the roof and 300 mm or more away from the ground or the floor. Pleasdo not install the LED fixture and cables in the follow place:

- water directly fall on or pooled
- the sunlight directly shines on
- liquids including choline or chemicals fall on
- high temperature and high humidity such as saunas
- coastal areas which are affected by sea spray

Caution:

Do not cut the LED fixture and the lead wire of outdoor product at a job site. Please do appropriate treatment for the lead wire and connector of the terminal of outdoor LED fixture.



Optional parts

1 Mounting clip for EFRO

Attachment

Option Parts

Model No : LRO-PT-A

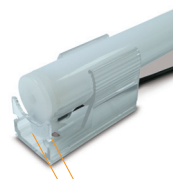
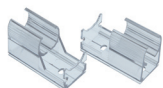
Attachment

2 pcs for 582 mm or shorter
3 pcs for 862 mm or longer

Option Parts

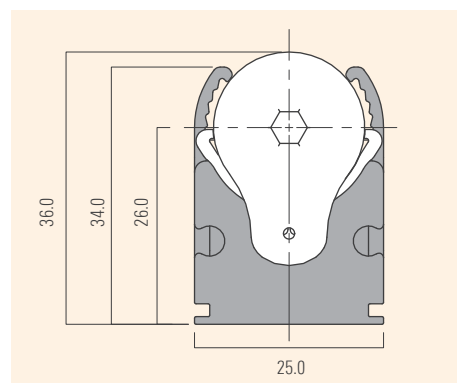
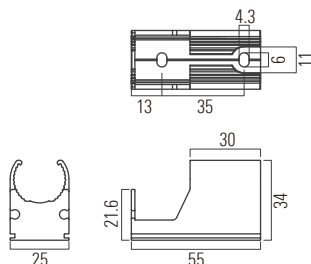
3 pcs/1 bag

- Holding LED fixture at both ends
- Angle adjustable
- Connectors can be put under the LED fixture
- Material: Clear polycarbonate



Cable holding

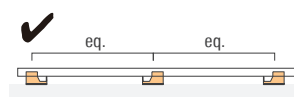
Holding fixture when vertical installation



Cautions: Use accurate number of Mounting parts

Install 3pcs of Mounting clips at the middle and both edge sides of LED fixture if the LED fixture is longer than 862mm. Otherwise, the LED fixture will bow by its weight and may defect.

- Number of Mounting clips (LRO-PT-A)
2 pcs for 582 mm or shorter
3 pcs for 862 mm or longer



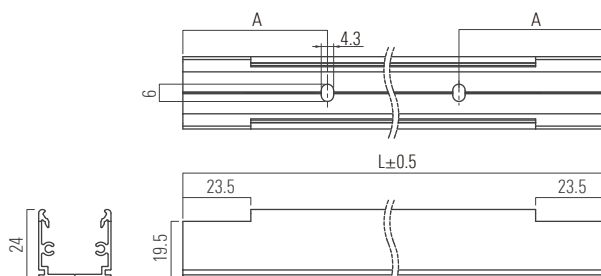
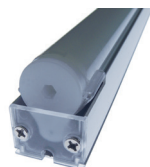
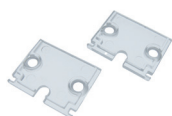
2 Aluminum mounting rail for EFRO ****

Option Parts

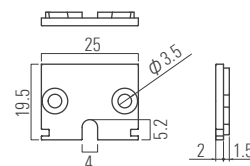
Model No : LRO-RL****-AL

****: Length (0164/0304/0584/0864/1144)

- For easy and quick installation: unnecessary to pre-align the clips
- Connectors can be put under LED fixture
- Material
Rail: Aluminum, End cap: Semi-clear polycarbonate
- Delivered with the same length as the product
(Length variation: 164mm, 304mm, 584mm, 864mm, 1144mm)



Length	A(mm)
0164	30
0304	50
0584,0864,1144	100



Attachment of rail

End cap for aluminum rail
Model No : LRO-RL-EC
2 pcs / 1 bag is included
Screws (4 pcs of Flat head, M3L8)
are included

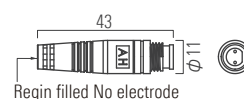
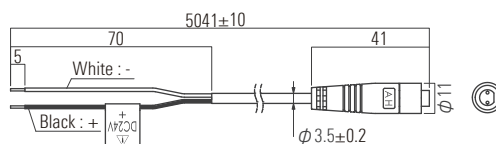
3 Power supply cable 5M for AH1 connector OD3.5

Option Parts

Required

Model No : CAD-VA5000-FJNN-O

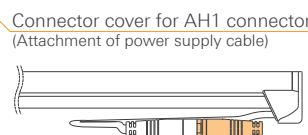
- Required for each circuit of LED fixture
- One side connector, one side bare wire
- 1 pcs of connector end cap (CC-MJ-O) is attached
* to avoid water intrusion from the terminal connector of LED fixture



Regin filled No electrode

Attachment of cable

Connector cover for AH1 connector
Model No : CC-MJ-O
1 pcs / 1 bag is included



Cautions: Waterproofing process for terminal connector

The unenclosed connector at the terminal of LED fixture must be sealed with connector cover for AH1 connector which is attached with power supply cable (CAD-VA5000-FJNN-O). Make sure to rotate the fastening part until no longer can rotate.

Installing the product

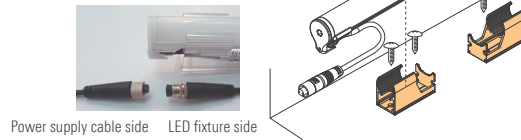
For horizontal installation

Installation with Mounting clip for EFRO

Attach Mounting clip for EFRO (LRO-PT-A) at below position with screws supplied by installer (Pan head screws M4 recommended), and insert the LED fixture with considering the direction of the connector of power supply cable side. See below picture for holding the cable and connector underneath the LED fixture. Downwards installation is available as well.

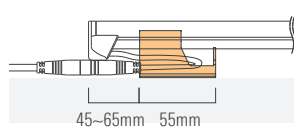
- Attachment** **Option Parts**
- ① Mounting clip for EFRO (LRO-PT-A)

Secure 1 mounting clip with 2 screws

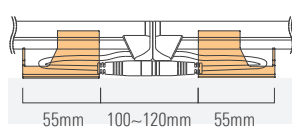


Recommended position of Monting clips

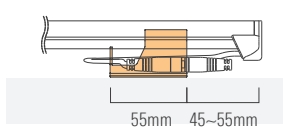
Power supply side of LED fixture



Between two LED fixtures



Terminal of LED fixture



- Attachment** **Option Parts**
- ① Mounting clip for EFRO (LRO-PT-A)

Attachment of cable **Option Parts**
Connector cover for AH1 connector (CC-MJ-O)

The cable can be hooked at the slit of Mounting clip to prevent falling down.

Installation with Mounting rail for EFRO

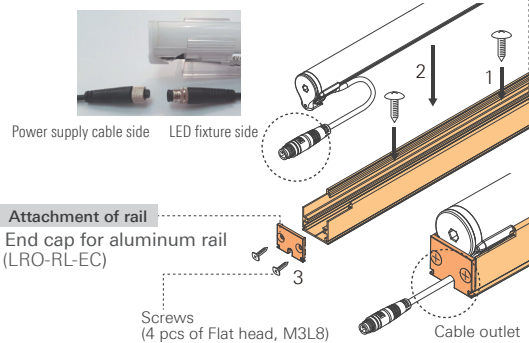
1. Attach Aluminum mounting rail for EFRO (LRO-RL****-AL) at below position with screws supplied by installer (Pan head screws M4 recommended)
2. Insert the LED fixture with considering the direction of the connector of power supply cable side.
3. After passing the cable through the cable outlet of the end cap, fix the end cap to the rail by screws attached with the products.

Note: The order of installation can be changed by the situation of the site.

Note: Please fix with the same number of screws as the number of screw holes.

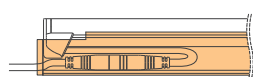
- Attachment** **Option Parts**
- ② Aluminum mounting rail for EFRO **** (LRO-RL****-AL)

****: Length (0164/0304/0584/0864/1144)

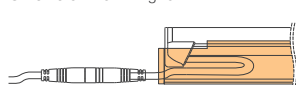


Position of connector

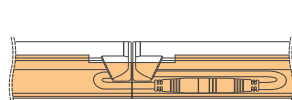
Power supply side of LED fixture



Outside of mounting rail

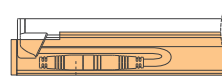


Between two LED fixture



To reduce the gap of two LED fixtures, end caps are not necessary to use.

Terminal of LED fixture



Attachment of cable **Option Parts**
Connector cover for AH1 connector (CC-MJ-O)

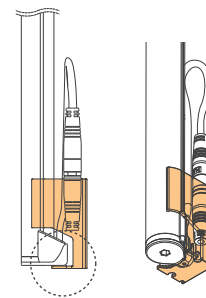
For vertical installation

Installation with Mounting clip for EFRO

Make sure the bottom of LED fixture hook on the edge of the Mounting clip in accordance with the diagram.

Caution: If the weight of the LED fixture is not supported by the edge of the Mounting clip, it may slide down and fall.

Terminal of LED fixture



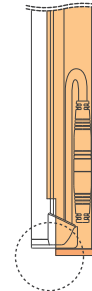
Connector cover for AH1 connector can be stored in the Mounting clip. Connecting the power supply cable at the top of LED fixture.

Installation with Mounting rail for EFRO

Make sure the bottom of LED fixture hook on the edge of the end cap for aluminum rail in accordance with the diagram.

Caution: If the weight of the LED fixture is not supported by the end cap for aluminum mounting rail, it may slide down and fall.

Terminal of LED fixture



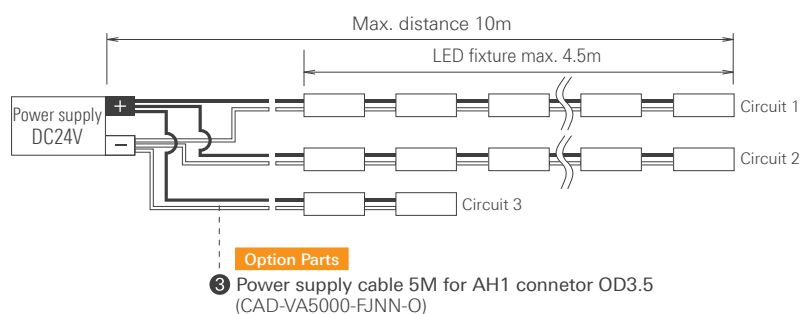
Connector cover for AH1 connector can be stored in the Mounting rail. Connecting the power supply cable at the top of LED fixture.

Connecting to the power supply

- Cables used for connecting LED fixtures and Power supply must be a suitable type and gauge.
- Cables should be joined with suitable terminal block or methods as appropriate to the installation and operating environment.
Caution: When using a long cable with thin dimension, the resistance of cable will increase. Voltage drop and heat dispatching may occur and result in brightness decreasing.
Caution: When separating one cable to multiple circuits in the same gauge, the current loading focuses on the junction of the branch circuit and high temperature will liberate on there. Please consider the loading of the power supply (quantity of LED fixture) and review the wiring system to avoid the above problem.
- When connecting the dimmer driver with power supply, unpredicted noise might occur. It is a characteristic of electronic devices, not a malfunction of the LED fixture. Please choose an appropriate power supply and consider a place to install. Reducing the loading factor of LED fixture might improve the noise from the power supply while the noise for the LED fixtures might be improved by splitting the circuit of LED fixtures into multiple.
- When you adjust the length of the power supply cable, please be careful not to damage the core wire.

System configuration diagram

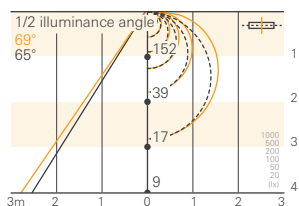
- The number of LED fixtures that can be connected to the power supply depends on the output (W) of the power supply.
- For Luci EFRO, the maximum number connectable in series is 4.5 m. If more than the maximum number must be connected, connect in separate systems.
- LED fixture lengths can be combined freely; however, the maximum number of meters connectable in series (4.5 m) must be strictly observed.
- Small noise may be emitted from the appliance and the dimmer while using the dimmer, but it is normal. Load capacity of 60% is recommended to reduce noise. (normal operation: 70%)



Direct horizontal surface light intensity distribution chart

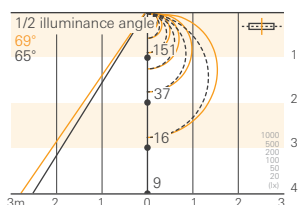
LRO-1142-W-DF-IW

Light source color 4200K
Brightness 152 cd
Luminous flux 802 lm
Color rendering index Ra 94



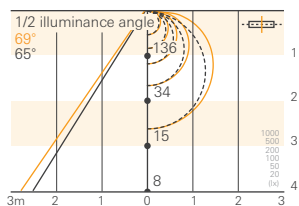
LRO-1142-WW-DF-IW

Light source color 3500K
Brightness 151 cd
Luminous flux 762 lm
Color rendering index Ra 94



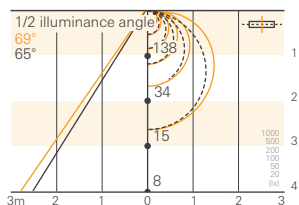
LRO-1142-L30-DF-IW

Light source color 3000K
Brightness 136 cd
Luminous flux 688 lm
Color rendering index Ra 93



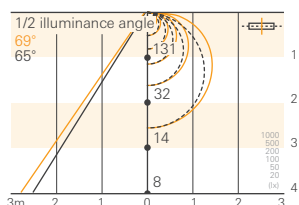
LRO-1142-L27-DF-IW

Light source color 2700K
Brightness 138 cd
Luminous flux 697 lm
Color rendering index Ra 93

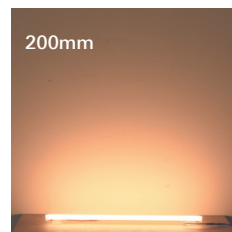
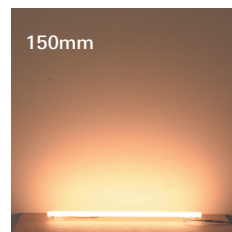
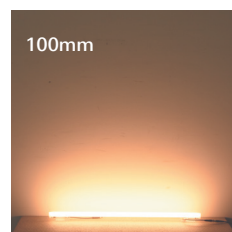
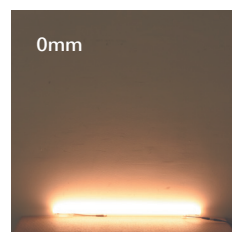


LRO-1142-L24-DF-IW

Light source color 2400K
Brightness 131 cd
Luminous flux 662 lm
Color rendering index Ra 93



Distance from wall



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