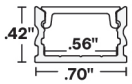
# ESSENTIALS LALO-FLAT (01) STATIC WHITE

24VDC Linear Fixtures - Surface & Recessed

410.2 & 410.16 Closet Rated up to 4.0W/ft






- Shallow, low-profile linear fixture for surface mount applications
- Choose from diffused, polar, or frosted lens options for varying diode visibility and beam angles
- Three mounting options
- Features painted end caps to match extrusion finish
- Suitable for installation in the storage area of a clothes closet when specified with LEDs at 4.0 watts or less per foot per NEC regulations
- Can be suitable for exterior use when specified as wet, contact factory for more information
- Optional plastic louver accessory available in white or black for added glare control

**INFORMATION REQUIRED FOR LIGHTING SCHEDULE**

| 1 PRODUCT | 2 WATTS/ FT | 3 CCT | 4 RATED | 5 EFFICIENCY | 6 LENS |
|---|---|---|---|---|---|
| | | | | STD | |

**ADDITIONAL INFORMATION REQUIRED TO ORDER**

| 7 WIRE INPUT/ OUTPUT | 8 CONNECTOR/ WIRE IN | 9 CONNECTOR/ WIRE OUT | 10 WIRE COLOR | 11 WIRE TYPE | 12 MOUNTING | 13 FINISH | 14 LENGTH (IN) | 15 EXACT/ OPTIMAL |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

Sample Part Number: **LL1SW-5.0-30-DRY-STD-DF-P1-BW-BW-BK-CL2-SST-BK-48"-E**

## 1 PRODUCT

**LL1SW**
**LL1SW-USA**

Select USA option for BAA and BABA projects. Only DRY or WET ratings apply.

See following pages for compatible power supplies.

## 2 WATTS/FT

| | |
|---|---|
| **1.5** | 1.5W/ft |
| **3.0** | 3.0W/ft |
| **4.0** | 4.0W/ft |
| **5.0** | 5.0W/ft |

## 3 CCT

| | |
|---|---|
| **18** | 1800K |
| **20** | 2000K |
| **22** | 2200K |
| **24** | 2400K |
| **27** | 2700K |
| **30** | 3000K |
| **35** | 3500K |
| **40** | 4000K |

## 4 RATED

| | |
|---|---|
| **DRY** | IP20 |
| **DMP** | IP54 |
| **WET** | IP67 |

Can be suitable for exterior use, contact factory for more information

## 5 EFFICIENCY

| | |
|---|---|
| **STD** | Standard |

## 6 LENS

| | |
|---|---|
| **DF** | Diffused |
| **PR** | Polar |
| **FR** | Frosted |

For representation of LED visibility, see Diode Visibility section on following pages. For beam angles, see Photometric Performance section on following pages For optional snap-on louver ordering, see External Louver Accessory section on following pages

## 7 WIRE INPUT/OUTPUT

**SINGLE (Input only)**

| | |
|---|---|
| **S1** | End Feed |
| **S2** | Bottom Feed |

**PASS THROUGH (Input/output)**

| | |
|---|---|
| **P1** | End Feed |
| **P2** | Bottom Feed |

For continuous mounting, consider bottom feed.

## 8 CONNECTOR/WIRE IN

| | |
|---|---|
| **BW** | Bare Wire (Standard 24") |
| **BRL** | Barrel |
| **CON6** | Connector 6" |
| **CON24** | Connector 24" |

| | |
|---|---|
| **BW** | Bare Wire (Standard 24") |
| **BRL** | Barrel |
| **CON6** | Connector 6" |
| **CON24** | Connector 24" |

BW: Standard length is 24", Max length is 120". Request custom length by writing in part number next to BW (example: BW48)

## 9 CONNECTOR/WIRE OUT

| | |
|---|---|
| **CLS** | Closed End (No feed) |

| | |
|---|---|
| **BW** | Bare Wire (Standard 24") |
| **BRL** | Barrel |
| **CON6** | Connector 6" |
| **CON24** | Connector 24" |

BW: Standard length is 24", Max length is 120". Request custom length by writing in part number next to BW (example: BW48)

## 10 WIRE COLOR

| | |
|---|---|
| **WH** | White |
| **BK** | Black |
| **N/A** | For Barrel |

wet barrel only available in black

## 11 WIRE TYPE

| | |
|---|---|
| **CL2** | Class 2 |
| **CL2P** | Plenum Rated |
| **N/A** | For Barrel |

CL2P only available with bare wire leads (BW)

## 12 MOUNTING

| | |
|---|---|
| **SST** | Stainless Steel |
| **M4** | Low Profile Magnet |
| **MG** | Magnet |

## 13 FINISH

| | |
|---|---|
| **ST** | Satin |
| **BK** | Black |
| **CU** | Custom |

Custom finishes require a longer lead time, consult factory

## 14 LENGTH (IN)

Minimum length is 12", maximum length is 98" not including end caps. Contact us for lengths under 12".

## 15 EXACT/OPTIMAL

| | |
|---|---|
| **O** | Optimal Illumination |
| **E** | Exact Specified Length |

Exact fixtures match the exact length you specify, but they may have dim spots at the ends. Optimal fixtures are slightly shorter than the length specified, but provide full illumination from end to end. See Exact/Optimal Fixture Length charts.

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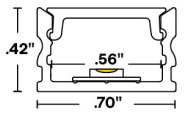
Specification subject to change. Rev-08-18-26

5 year warranty | Warranty only valid with QTL power supplies | Field modifications void warranty | Data subject to change, all data has +/- 5% tolerance

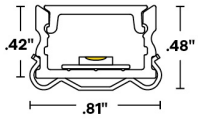
# ESSENTIALS LALO-FLAT (01) STATIC WHITE

24VDC Linear Fixtures - Surface & Recessed

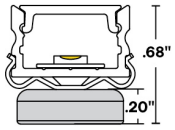
## 1 PRODUCT - DIMENSIONS



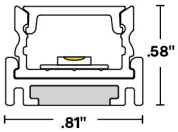

Profile with flat lens



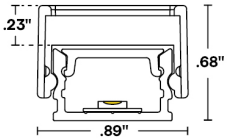

Profile with flat lens and stainless steel mounting clip



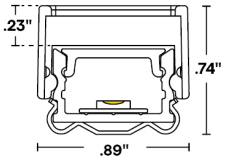

Profile with flat lens and magnet mounting clip



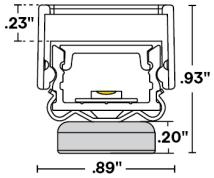

Profile with flat lens and low profile magnet



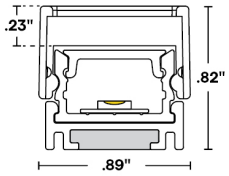

Profile with flat lens and plastic louver




Profile with flat lens, stainless steel mounting clip, and plastic louver




Profile with flat lens, magnet mounting clip, and plastic louver



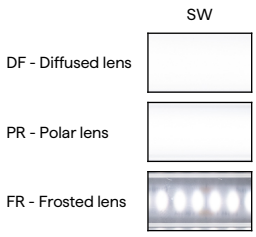

Profile with flat lens, low profile magnet, and plastic louver

## 2 DELIVERED LUMENS

[Calculated L70 = 70000 hrs]
Tested with LL1SW-**-30-DRY-STD

| | 1.5 W/FT | | 3.0 W/FT | | 4.0 W/FT | | 5.0 W/FT | |
|---|---|---|---|---|---|---|---|---|
| | LM/FT | CRI | LM/FT | CRI | LM/FT | CRI | LM/FT | CRI |
| FR | 142 | 98 | 248 | 98 | 308 | 98 | 375 | 98 |
| PR | 134 | 98 | 234 | 98 | 291 | 98 | 354 | 98 |
| DF | 120 | 98 | 210 | 98 | 261 | 98 | 318 | 98 |

## 6 DIODE VISIBILITY



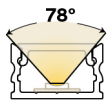

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# ESSENTIALS LALO-FLAT (01) STATIC WHITE

24VDC Linear Fixtures - Surface & Recessed

## PHOTOMETRIC PERFORMANCE

Nominal beam spread shown, beam spread varies based on light engine. For more detailed information, see photometric data.



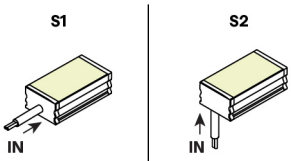

78°

## TEMPERATURE RATINGS

| | | 1.5 W/FT | | 3.0 W/FT | | 4.0 W/FT | | 5.0 W/FT | |
|---|---|---|---|---|---|---|---|---|---|
| | | Min | Max | Min | Max | Min | Max | Min | Max |
| DRY | Ambient Operating Temp - Surface | -4°F | 140°F | -4°F | 130°F | -4°F | 125°F | -4°F | 120°F |
| DMP | Ambient Operating Temp - Surface | -4°F | 140°F | -4°F | 130°F | -4°F | 125°F | -4°F | 120°F |
| WET | Ambient Operating Temp - Surface | -4°F | 135°F | -4°F | 125°F | -4°F | 120°F | -4°F | 115°F |

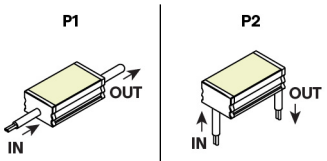
## 7 WIRE INPUT/OUTPUT

SINGLE (Input only)



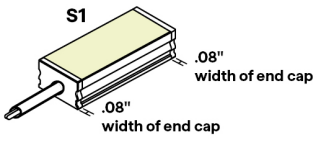

End Feed | Bottom Feed

PASS THROUGH (Input/Output)

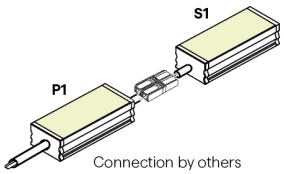



End Feed | Bottom Feed

## CONFIGURATION OPTIONS

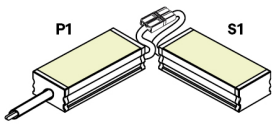



Single End Feed



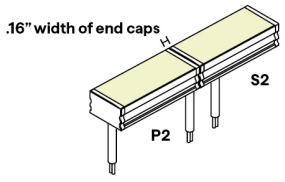

Connection by others

Non-Continuous End Feed

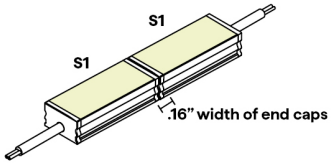



Connection by others

Non-Continuous Corner Feed




Continuous Bottom Feed




Continuous End to End Feed

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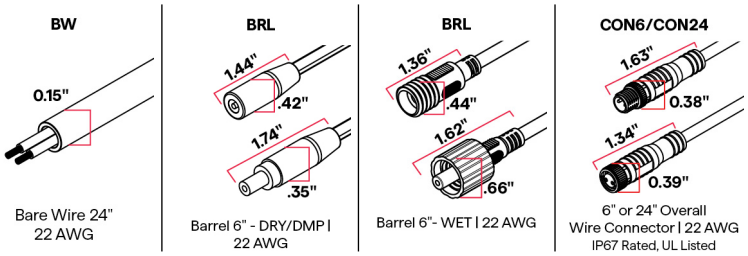
Specification subject to change. Rev-08-18-26

# ESSENTIALS LALO-FLAT (01) STATIC WHITE

24VDC Linear Fixtures - Surface & Recessed

## 8/9 CONNECTOR/WIRE – IN/OUT

Connector/Wire In or Out not needed to specify product. Standard configuration is BW for Wire In and CLS for Wire out



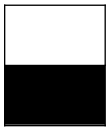

Bare Wire 24"
22 AWG

Barrel 6" - DRY/DMP | 22 AWG

Barrel 6"- WET | 22 AWG

6" or 24" Overall
Wire Connector | 22 AWG
IP67 Rated, UL Listed

## 10 WIRE COLOR

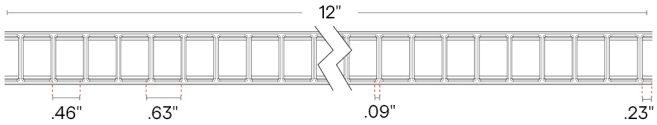


White

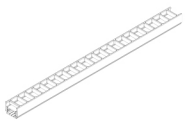
Black

## EXTERNAL LOUVER ACCESSORY

**PLASTIC**

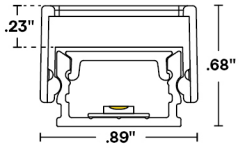



**L1-XX**



Lumen Multiplier

| WH | BK |
|---|---|
| 0.72 | 0.51 |




Profile with plastic louver

To order separately use
LALO-L1-FLAT-KIT-WH or
LALO-L1-FLAT-KIT-BK

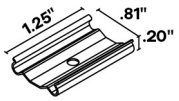
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# ESSENTIALS LALO-FLAT (01) STATIC WHITE

24VDC Linear Fixtures - Surface & Recessed

## 12 MOUNTING

**SST**



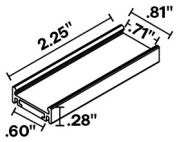

Stainless Steel Clip

2 clips provided for 4' or less; 4 clips provided for greater than 4'

To order separately use SST-01

Each clip comes with a #4 x 5/8" Flat Head SS

**M4**

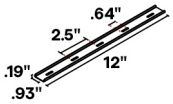



Low Profile Magnet

One M4 provided per foot.

To order separately use MG-04

**MMA-04**



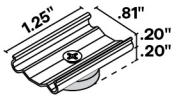

Magnet Mount Accessory for M4

Sold separately, to order use MMA-04

Each bracket comes with 2 #6 x 5/8 Flat Head SS

Required when mounting to a non-magnetic surface

**MG**

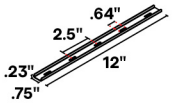



Magnet Clip

One MG provided per foot

To order separately use MG-01

**MMA-01**



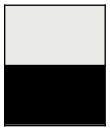

Magnet Mount Accessory of MG-01

Sold separately, to order use MMA-01

Each bracket comes with 2 #6 x 5/8" Flat Head SS

Required when mounting to a non-magnetic surface

## 13 FINISH



Satin

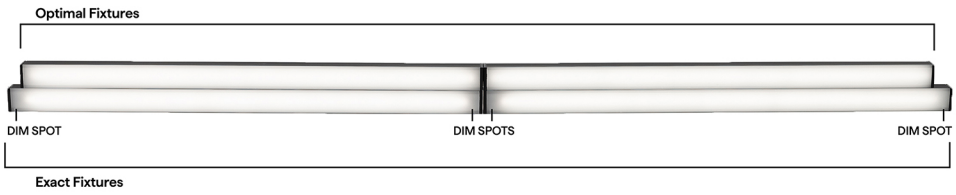
Black

Custom finishes require a longer lead time, consult factory

## 14 EXACT/OPTIMAL FIXTURE LENGTH

E/O Length Calculator →  E/O Explained →

Exact fixtures are the exact length specified. Optimal fixtures' length is rounded down based on LED cut points to allow the fixture to be illuminated end to end. For runs with multiple fixtures that need to fill a specific length, it's recommended to order all optimal fixtures with an exact fixture at the end of the run.



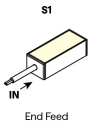

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# ESSENTIALS LALO-FLAT (01) STATIC WHITE

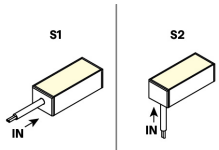
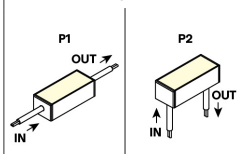
24VDC Linear Fixtures - Surface & Recessed

## SW DRY DMP LENGTHS BY INCH

### EXACT LENGTH

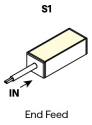
| Requested Length | Potential dim spot on either end of a S1 fixture   |
|---|---|
| 12" | 0.5" |
| 13" | 0.5" |
| 14" | 0.5" |
| 15" | 0.5" |
| 16" | 0.5" |
| 17" | 0.5" |
| 18" | 0.5" |
| 19" | 0.5" |
| 20" | 0.5" |
| 21" | 0.5" |
| 22" | 0.5" |
| 23" | 0.5" |
| 24" | 0.5" |
| 36" | 0.5" |
| 48" | 0.5" |
| 60" | 0.5" |
| 72" | 0.5" |
| 84" | 0.5" |
| 96" | 0.5" |

### OPTIMAL LENGTH

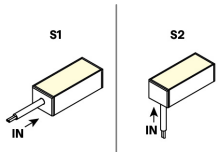
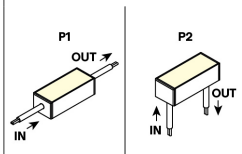
| Requested Nominal Length | S1 & S2   | P1 & P2   |
|---|---|---|
| 12" | 11.41" | 11.66" |
| 13" | 12.41" | 12.66" |
| 14" | 13.41" | 13.66" |
| 15" | 14.41" | 14.66" |
| 16" | 15.41" | 15.66" |
| 17" | 16.41" | 16.66" |
| 18" | 17.41" | 17.66" |
| 19" | 18.41" | 18.66" |
| 20" | 19.41" | 19.66" |
| 21" | 20.41" | 20.66" |
| 22" | 21.41" | 21.66" |
| 23" | 22.41" | 22.66" |
| 24" | 23.41" | 23.66" |
| 36" | 35.41" | 35.66" |
| 48" | 47.41" | 47.66" |
| 60" | 59.41" | 59.66" |
| 72" | 71.41" | 71.66" |
| 84" | 83.41" | 83.66" |
| 96" | 95.41" | 95.66" |

## SW WET LENGTHS BY INCH

### EXACT LENGTH

| Requested Length | Potential dim spot on either end of a S1 fixture   |
|---|---|
| 12" | 0.5" |
| 13" | 0.5" |
| 14" | 0.5" |
| 15" | 0.5" |
| 16" | 0.5" |
| 17" | 0.5" |
| 18" | 0.5" |
| 19" | 0.5" |
| 20" | 0.5" |
| 21" | 0.5" |
| 22" | 0.5" |
| 23" | 0.5" |
| 24" | 0.5" |
| 36" | 0.5" |
| 48" | 0.5" |
| 60" | 0.5" |
| 72" | 0.5" |
| 84" | 0.5" |
| 96" | 0.5" |

### OPTIMAL LENGTH

| Requested Nominal Length | S1 & S2   | P1 & P2   |
|---|---|---|
| 12" | 11.56" | 11.71" |
| 13" | 12.56" | 12.71" |
| 14" | 13.56" | 13.71" |
| 15" | 14.56" | 14.71" |
| 16" | 15.56" | 15.71" |
| 17" | 16.56" | 16.71" |
| 18" | 17.56" | 17.71" |
| 19" | 18.56" | 18.71" |
| 20" | 19.56" | 19.71" |
| 21" | 20.56" | 20.71" |
| 22" | 21.56" | 21.71" |
| 23" | 22.56" | 22.71" |
| 24" | 23.56" | 23.71" |
| 36" | 35.56" | 35.71" |
| 48" | 47.56" | 47.71" |
| 60" | 59.56" | 59.71" |
| 72" | 71.56" | 71.71" |
| 84" | 83.56" | 83.71" |
| 96" | 95.56" | 95.71" |

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# ESSENTIALS LALO-FLAT (01) STATIC WHITE

24VDC Linear Fixtures - Surface & Recessed

## COMPATIBLE POWER SUPPLIES

See power supplies cut sheets for more information. Data subject to change, all data has +/- 5% tolerance.

| DIM TO LEVEL | INDOOR | | OUTDOOR | |
|---|---|---|---|---|
| | SW24/1.5-4.0 | SW24/5.0, SW-HE, SW-HE+ | SW24/1.5-4.0 | SW24/5.0, SW-HE, SW-HE+ |
| Dim to Black | Q6M-DC+CAP<br>QTM-DC+CAP<br>iQ-PH+QD1 | Q6M-DC+CAP<br>QTM-DC+CAP<br>iQ-PH+QD1 | QOM-DC+CAP<br>QOM-PH | QOM-DC+CAP<br>QOM-PH |
| 0.1% | QT-CAB-QZ-PH/0-10V<br>QT-CAB-eLED+0-10V<br>QT-CAB-eLED+0-10V-AWN<br>QT-CAB-eLED+DALI-DT6<br>QT-CAB-eLED+DALI-DT6-AWN<br>QTM-eLED+0-10V<br>QTM-eLED+0-10V-AWN<br>QTM-eLED+DALI-DT6<br>QTM-eLED+DALI-DT6-AWN<br>QZ-BOWTIE+DIMMER<br>QZ-DMX<br>QZ-PRO-PH/0-10V<br>QZ-STICK-PH/0-10V<br>QZLP | QT-CAB-QZ-PH/0-10V<br>QT-CAB-eLED+0-10V<br>QT-CAB-eLED+0-10V-AWN<br>QT-CAB-eLED+DALI-DT6<br>QT-CAB-eLED+DALI-DT6-AWN<br>QTM-eLED+0-10V<br>QTM-eLED+0-10V-AWN<br>QTM-eLED+DALI-DT6<br>QTM-eLED+DALI-DT6-AWN<br>QZ-BOWTIE+DIMMER<br>QZ-DMX<br>QZ-PRO-PH/0-10V<br>QZ-STICK-PH/0-10V<br>QZLP | Q-SET-QZ-DMX<br>Q-SET-QZ-PH/0-10V<br>Q-SET-eLED+0-10V<br>QOM-eLED+0-10V<br>QOM-eLED+DALI-DT6<br>QOM-eLED+DALI-DT6-PS<br>QZ-DMX<br>QZ-PRO-PH/0-10V | Q-SET-QZ-DMX<br>Q-SET-QZ-PH/0-10V<br>Q-SET-eLED+0-10V<br>QOM-eLED+0-10V<br>QOM-eLED+DALI-DT6<br>QOM-eLED+DALI-DT6-PS<br>QZ-DMX<br>QZ-PRO-PH/0-10V |
| 1% | Q-DIM<br>QTM-eLED(E)<br>QZ-DALI-DT6 | Q-DIM<br>QTM-eLED(E)<br>QZ-DALI-DT6 | Q-SET+QZ-DALI-DT6<br>QZ-DALI-DT6 | Q-SET+QZ-DALI-DT6<br>QZ-DALI-DT6 |
| 10% | Non-Dim Power Supply with SW App Dongle | Non-Dim Power Supply with SW App Dongle | Q-HEX-mini-DC<br>Q-SET-mLED | |

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# ESSENTIALS LALO-FLAT (01) STATIC WHITE

24VDC Linear Fixtures - Surface & Recessed

| DIMMING PROTOCOL | INDOOR | | OUTDOOR | |
|---|---|---|---|---|
| | SW24/1.5-4.0 | SW24/5.0, SW-HE, SW-HE+ | SW24/1.5-4.0 | SW24/5.0, SW-HE, SW-HE+ |
| **Non-Dim** | QT-CAB-eLED-ND<br>QTM-eLED-ND<br>QZ-ND | QT-CAB-eLED-ND<br>QTM-eLED-ND<br>QZ-ND | Q-SET-QZ-ND<br>Q-SET-eLED-ND<br>QOM-eLED-ND<br>QZ-ND | Q-SET-QZ-ND<br>Q-SET-eLED-ND<br>QOM-eLED-ND<br>QZ-ND |
| **Phase** | Q6M-DC+CAP<br>QT-CAB-QZ-PH/0-10V<br>QTM-DC+CAP<br>QTM-eLED(E)<br>QZ-BOWTIE+DIMMER<br>QZ-PRO-PH/0-10V<br>QZ-STICK-PH/0-10V<br>QZLP<br>iQ-PH+QD1 | Q6M-DC+CAP<br>QT-CAB-QZ-PH/0-10V<br>QTM-DC+CAP<br>QTM-eLED(E)<br>QZ-BOWTIE+DIMMER<br>QZ-PRO-PH/0-10V<br>QZ-STICK-PH/0-10V<br>QZLP<br>iQ-PH+QD1 | Q-HEX-mini-DC<br>Q-SET-QZ-PH/0-10V<br>Q-SET-mLED<br>QOM-DC+CAP<br>QOM-PH<br>QZ-PRO-PH/0-10V | Q-SET-QZ-PH/0-10V<br>QOM-DC+CAP<br>QOM-PH<br>QZ-PRO-PH/0-10V |
| **0-10V** | QT-CAB-QZ-PH/0-10V<br>QT-CAB-eLED+0-10V<br>QT-CAB-eLED+0-10V-AWN<br>QTM-eLED+0-10V<br>QTM-eLED+0-10V-AWN<br>QZ-PRO-PH/0-10V<br>QZ-STICK-PH/0-10V<br>QZLP | QT-CAB-QZ-PH/0-10V<br>QT-CAB-eLED+0-10V<br>QT-CAB-eLED+0-10V-AWN<br>QTM-eLED+0-10V<br>QTM-eLED+0-10V-AWN<br>QZ-PRO-PH/0-10V<br>QZ-STICK-PH/0-10V<br>QZLP | Q-SET-QZ-PH/0-10V<br>Q-SET-eLED+0-10V<br>QOM-eLED+0-10V<br>QZ-PRO-PH/0-10V | Q-SET-QZ-PH/0-10V<br>Q-SET-eLED+0-10V<br>QOM-eLED+0-10V<br>QZ-PRO-PH/0-10V |
| **Lutron Athena** | QT-CAB-eLED+0-10V-AWN<br>QT-CAB-eLED+DALI-DT6-AWN<br>QTM-eLED+0-10V-AWN<br>QTM-eLED+DALI-DT6-AWN | QT-CAB-eLED+0-10V-AWN<br>QT-CAB-eLED+DALI-DT6-AWN<br>QTM-eLED+0-10V-AWN<br>QTM-eLED+DALI-DT6-AWN | | |
| **ECO System** | QTM-eLED(E) | QTM-eLED(E) | | |
| **DMX** | QZ-DMX | QZ-DMX | Q-SET-QZ-DMX<br>QZ-DMX | Q-SET-QZ-DMX<br>QZ-DMX |
| **DALI-2: DT6** | QT-CAB-eLED+DALI-DT6<br>QT-CAB-eLED+DALI-DT6-AWN<br>QTM-eLED+DALI-DT6<br>QTM-eLED+DALI-DT6-AWN<br>QZ-DALI-DT6 | QT-CAB-eLED+DALI-DT6<br>QT-CAB-eLED+DALI-DT6-AWN<br>QTM-eLED+DALI-DT6<br>QTM-eLED+DALI-DT6-AWN<br>QZ-DALI-DT6 | Q-SET+QZ-DALI-DT6<br>QOM-eLED+DALI-DT6<br>QZ-DALI-DT6 | Q-SET+QZ-DALI-DT6<br>QOM-eLED+DALI-DT6<br>QZ-DALI-DT6 |
| **SCENE App Dimmed** | Non-Dim Power Supply with SW App Dongle | Non-Dim Power Supply with SW App Dongle | | |

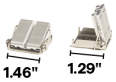
## COMPATIBLE MOUNTING ACCESSORIES

**HINGE - HMB-M**




Adjustable mounting bracket - Medium

**HINGE - HMB-L**




Adjustable mounting bracket - Large

**HINGE - HMB-XL**




Adjustable mounting bracket - XLarge

**Q-PIVOT**



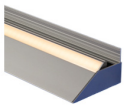

Small mounting accessory

**Q-ANGLE**




Adjustable mounting accessory

**QUOVA-STANDARD**



QUOVA Knife Edge

**NJ-MEDIUM**



J Mounting Bracket

**SD-L-MEDIUM**



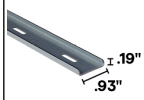
L Mounting Bracket

**MMA-01**




Magnet Mount Accessory of MG-01

**MMA-04**




Magnet Mount Accessory of MG-04

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Specification subject to change. Rev-08-18-26

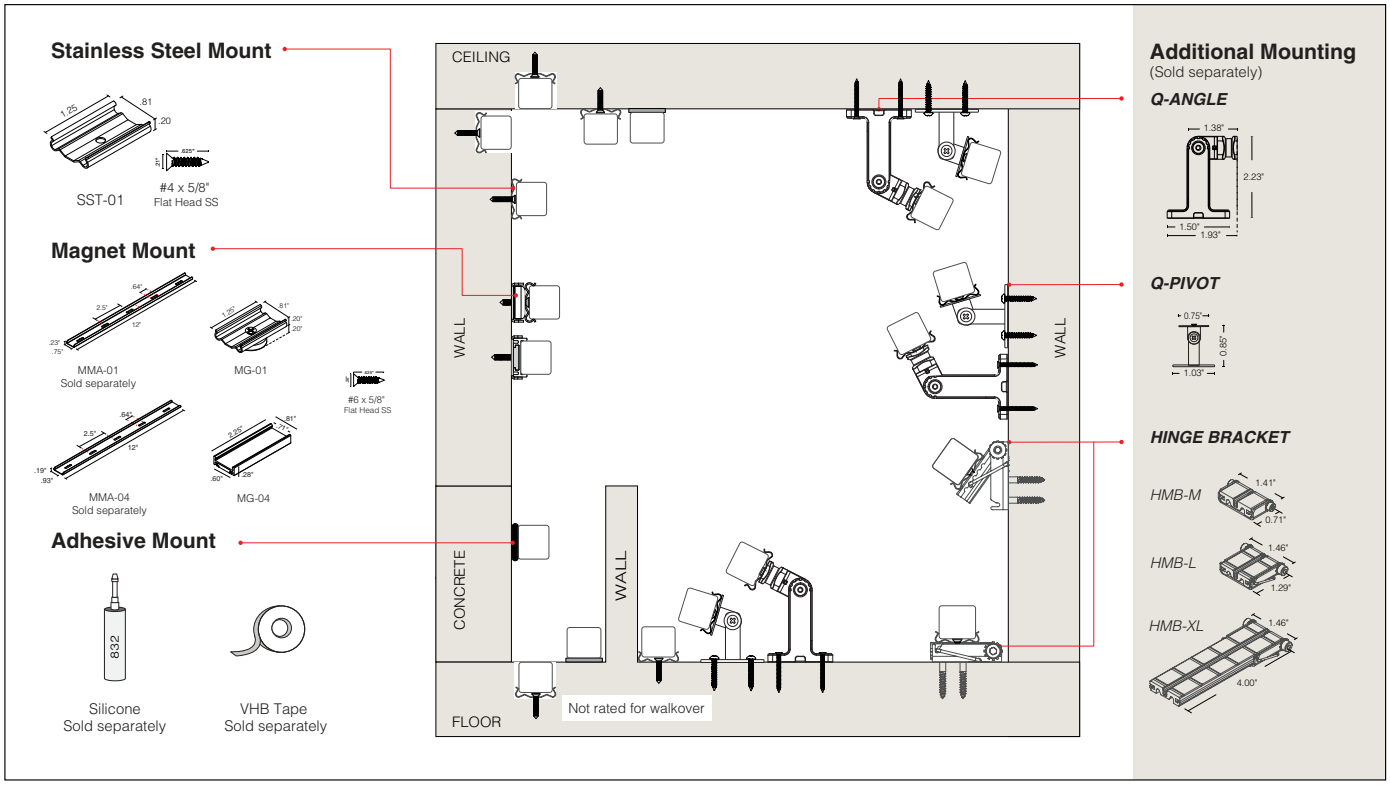
# ESSENTIALS LALO

Linear Fixture Installation Instructions

## ATTENTION: Please read all instructions BEFORE installation

- Product to be installed by a licensed electrician - Field modifications void warranty
- Use only with Class 2 power supply unit — Warranty only valid with QTL power supplies
- Surface mount or recessed in millwork
- Suitable for installation in storage area of a clothes closet when assembled as a finished fixture up to 4W/ft at QTL facility
- Not rated for walkover
- Input Voltage: 24VDC
- Diagrams for representation only and not to scale.

## METHODS OF INSTALLATION:




### Surface Mounting Method

- VHB Mount (page 5-6)
- Silicone Mount (page 7)
- Screw Mount (page 8)
- Magnet Mount (page 9)
- Low Profile Magnet Mount (page 10)

### Recessed Mounting Method

- Magnet Mount : Millwork (page 11)

### Louver Install Method

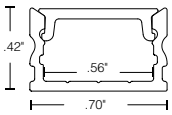
- Install Louver (page 12)
- Install Gasket For Vertical Louver (page 13)



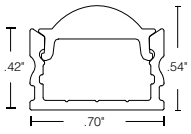
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# ESSENTIALS LALO

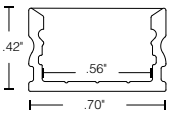
Linear Fixture Installation Instructions



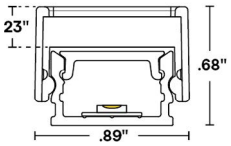

LALO-FLAT (01)



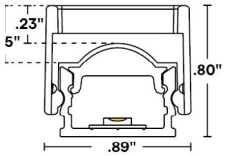

LALO-OPTICS (02)



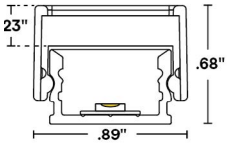

LALO-ENCAPSULATED (03)




LALO-FLAT (01)
With Louver




LALO-OPTICS (02)
With Louver

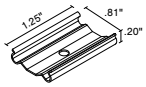



LALO-ENCAPSULATED (03)
With Louver

## COMPONENTS & HARDWARE

Alternate screw lengths can be used in installation as long as the screw diameter size is consistent with the included screw diameter size

### STAINLESS STEEL CLIP

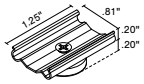



SST-01

| Included | |
|---|---|
|  | Flat Head Screw #4x5/8" |

- 2 clips provided for 4' or less; 4 clips provided for greater than 4'

### MAGNET CLIP

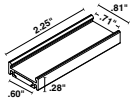



MG-01

| Included | |
|---|---|
|  | Flat Head Screw #6x5/8" |

- One magnet clip per foot

### LOW PROFILE MAGNET CLIP



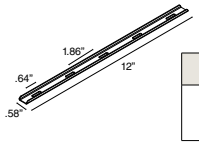

MG-04

| Included | |
|---|---|
|  | Flat Head Screw #6x5/8" |

- One magnet clip per foot

### ACCESSORIES SOLD SEPARATELY

#### MAGNET MOUNT ACCESSORY; sold individually




MMA-01

| Included |
|---|
| Flat Head Screw #6x5/8" |

- MMA-01 comes in 12" pieces; use at least one clip per MMA-01 accessory
- MMA-01 can be cut into smaller pieces, if desired

#### HINGE BRACKET; sold individually

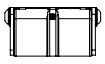
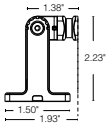


Image shows HMB-M

HMB-M
HMB-L
HMB-XL

| Included |
|---|
| • 3/4" long mount screw<br>• 1/4" #4 clip mount screw |

#### Q-ANGLE; sold in pairs




Q-ANGLE

| Included |
|---|
| • 3/4" long mount screw<br>• 1/4" #4 clip mount screw |

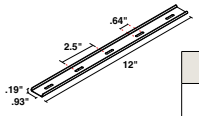
#### Q-PIVOT; sold in pairs




Q-PIVOT

| Included |
|---|
| • SS #4-40x3/16 Flat head screw<br>• 2 #4x3/4 Pan head screws |

#### LOW PROFILE MAGNET MOUNT ACCESSORY; sold Individually

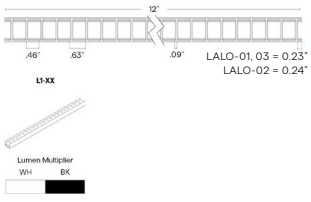



MMA-04

| Included |
|---|
| 2 #6x5/8" Flat Head screws |

- MMA-04 comes in 12" pieces; use at least one clip per MMA-04 accessory
- MMA-04 can be cut into smaller pieces, if desired

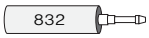
#### EXTERNAL LOUVER




- L1-WH - White Plastic
- L1-BK - Black plastic



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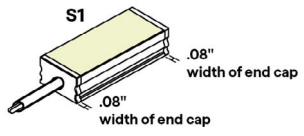
| ADHESIVE SOLD SEPARATELY | |
|---|---|
| SILICONE | VHB TAPE; sold in 15' increments |
|   DOWSIL 832 |  TAPE-VHB-IP20 |



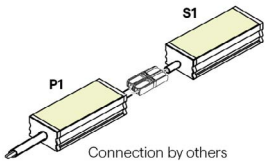
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## CONFIGURATION OPTIONS

LALO-FLAT & LALO-ENC

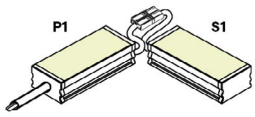



Single End Feed



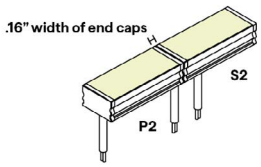

Connection by others

Non-Continuous End Feed

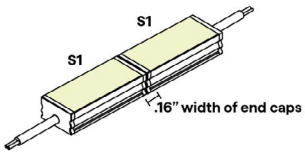



Connection by others

Non-Continuous Corner Feed

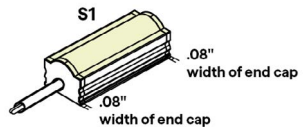



Continuous Bottom Feed

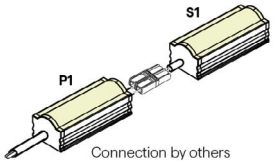



Continuous End to End Feed

LALO-OPTICS

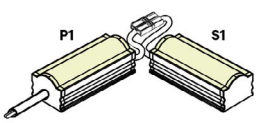



Single End Feed



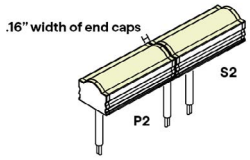

Connection by others

Non-Continuous End Feed

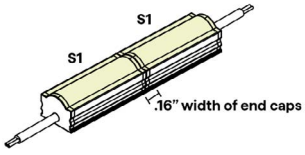



Connection by others

Non-Continuous Corner Feed




Continuous Bottom Feed




Continuous End to End Feed

Review wire method to ensure clean installation prior to mounting finished Fixture.

**NOTE:** Additional wire methods include:
S1 & S2: Connector/Wire Input only
P1 & P2: Connector/Wire Input and Output

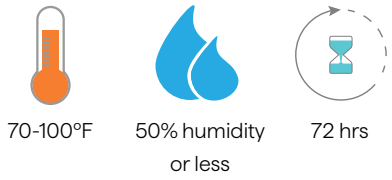


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## SURFACE MOUNTING METHOD

SURFACE PREPARATION

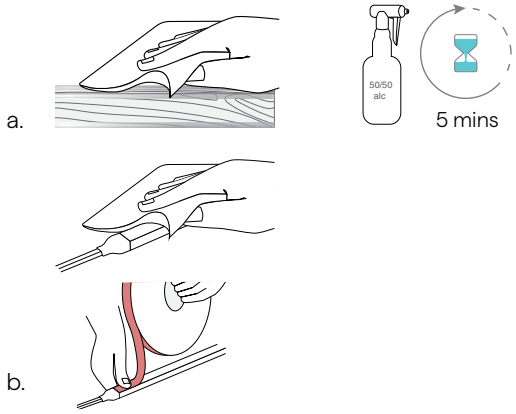
**1**




Temperature and environmental concerns:

- Ideal application environment is 70-100°F in 50% humidity or less.
- Minimum application temperature: 50°F
- This temperature and humidity should be maintained for 72 hours after application for maximum bond strength.

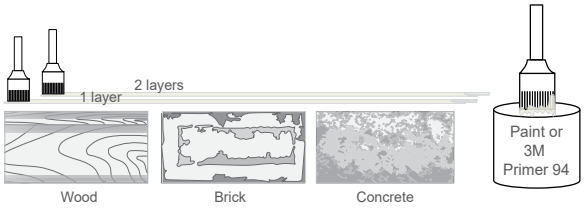
**2**




**a.** Using a 50/50 alcohol mix, thoroughly clean the backside of the Fixture and the surface area where Fixture will be installed. Allow 5 minutes to dry.

**b.** Peel back 0.5" of the VHB tape's protective film on one end and use firm pressure to adhere it to the desired surface, avoiding air bubbles. Continue peeling the film and adhering the tape in small sections until the entire length is installed.

**3**




For porous materials (Wood, Brick, Concrete etc.) apply two layers of paint or primer to the surface. This will help create a better bonding surface for these materials. These can be purchased from a local hardware store.

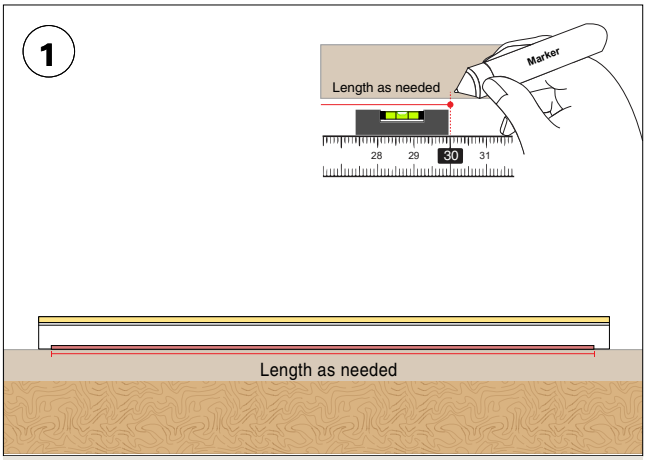
| MATERIALS | SUGGESTED EPOXIES |
|---|---|
| Concrete, Stone, Cinderblock, Metal, and Brick | Loctite Metal and Concrete Two-Part Epoxy |
| ABS, Fiberglass, Plastic, and PVC | Loctite Plastic Two-Part Epoxy |
| Tile, Wood, Ceramic, Glass, or Metal | Loctite Clear Two-Part Epoxy |
| All Purpose | Strong Stik |



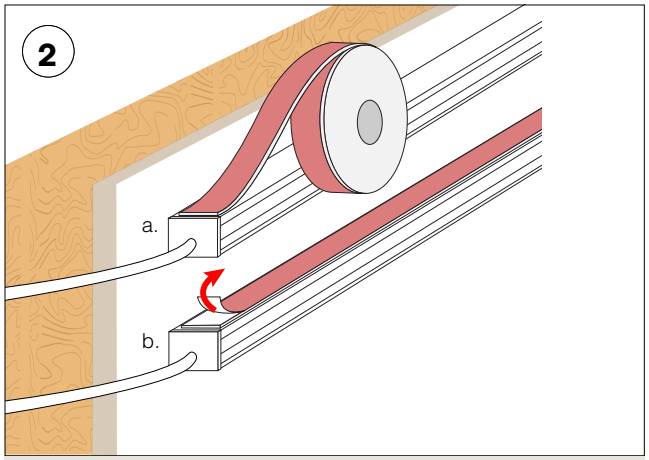
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## SURFACE MOUNTING METHOD: **VHB ADHESIVE MOUNT**

**BEFORE installation, the surface must be thoroughly cleaned and dried for maximum bond strength.**

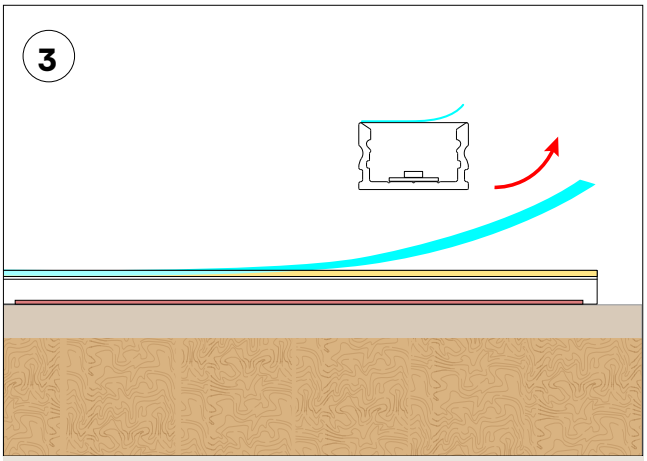



Determine the LALO fixture(s) location and positioning on desired surface before adhering Fixture to surface. Make any necessary reference markings to indicate fixture placement.




a. To adhere the VHB adhesive, peel the white film back while evenly applying the tape to the mounting side of the fixture. The red side should be visible.

b. Remove the red film and position fixture in place according to your previous reference marking(s).




Remove protective film from the surface of the fixture's lens.

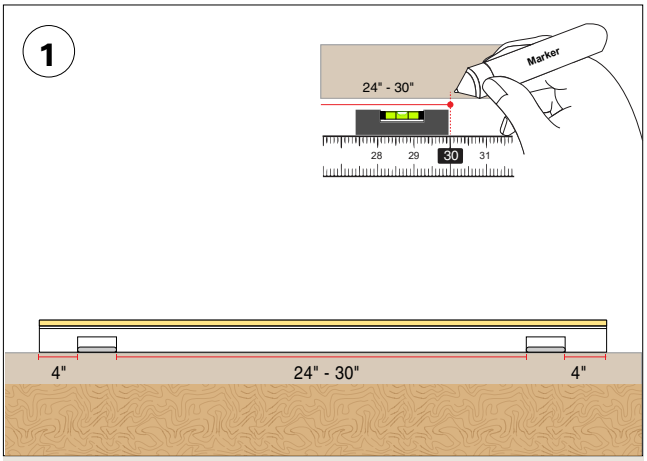
***NOTES:*** *EPOXY ALTERNATIVE: For improved bonding strength, apply a small amount of epoxy at each end. Refer to table on* page 5 *for suggested epoxies. These can be purchased at a local hardware store. Please follow all manufacturer instructions for suggested epoxy.*



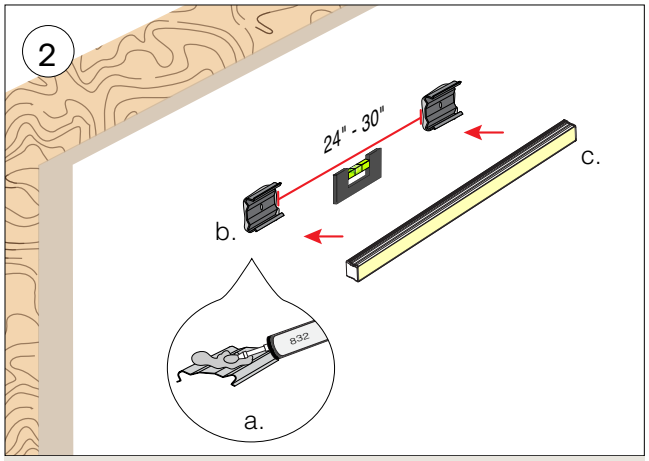
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## SURFACE MOUNTING METHOD: **SILICONE**

- 2 clips provided for 4’ or less; 4 clips provided for greater than 4’




Determine the LALO fixture(s) location and positioning on desired surface; evenly distribute clips. Make any necessary reference markings to indicate where each clip is to be secured in place. Recommended every 24” - 30”.

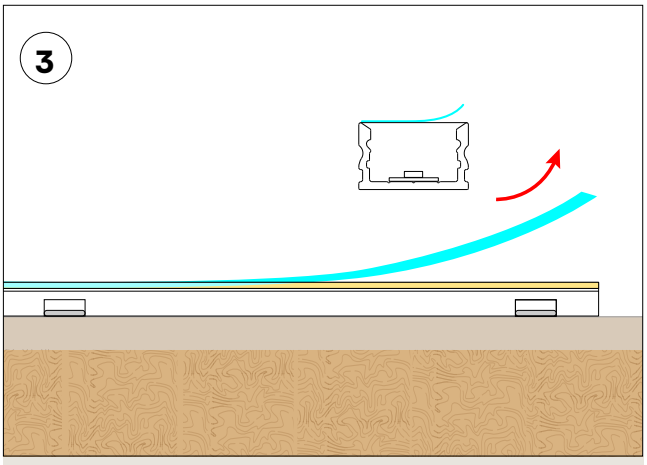



**a.** Firmly press the silicone-coated clips on the marked reference points.

**b.** Wait for silicone adhesive to cure completely before snapping fixture into place.

**c.** Snap fixture onto clips.

**NOTE:** Cure time is dependent on the type of silicone adhesive used. Refer to silicone product manufacturer for accurate drying time.



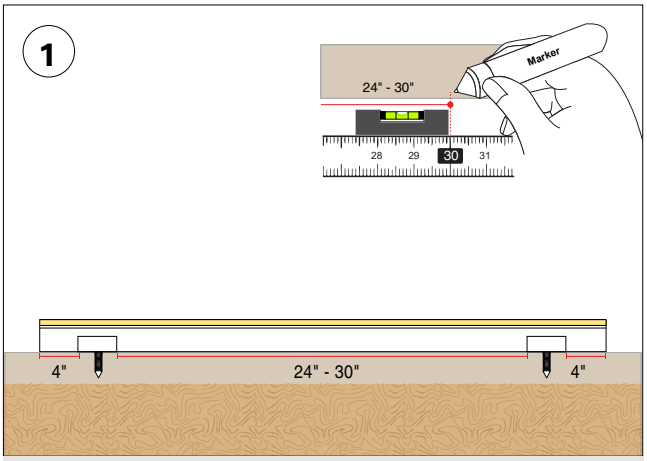

Remove protective film from the surface of the fixture’s lens.



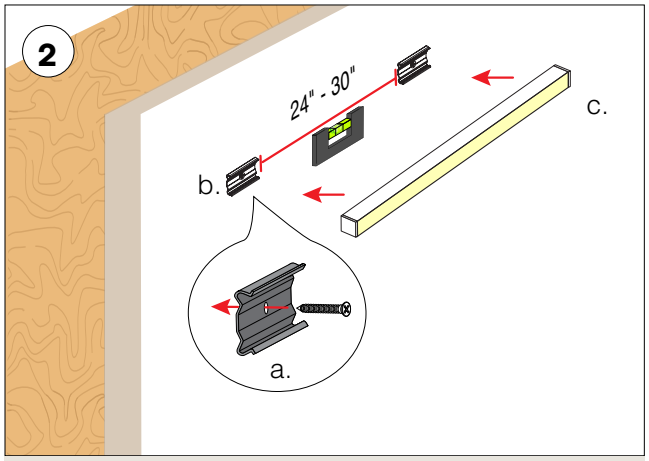

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## SURFACE MOUNTING METHOD: **SCREW MOUNT**

- 2 clips provided for 4’ or less; 4 clips provided for greater than 4’




Determine the LALO fixture(s) location and positioning on desired surface; evenly distribute clips. Make any necessary reference markings to indicate where each clip is to be secured in place. Recommended every 24” - 30”.

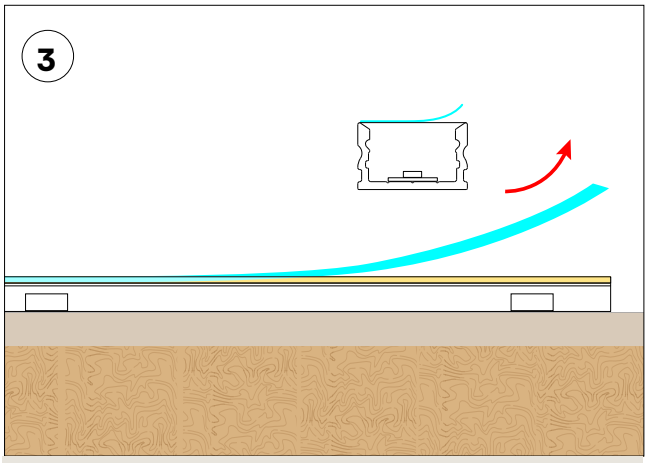



**a.** Secure clips using the #4 flat head hardware provided.

**b.** Ensure the screw head is flush with the clip’s base.

**c.** Snap fixture onto clips.

**NOTE:** Flat head screw type is dependent on surface/application material. Alternative flat head screws may be required. Refer to the surface material manufacturer for suggested screw type.



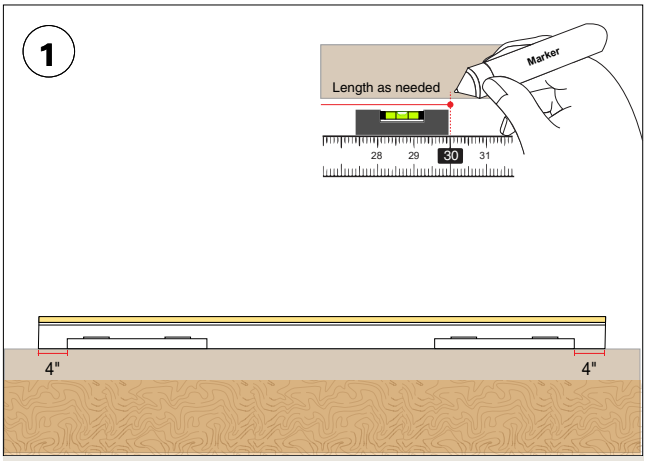

Remove protective film from the surface of the fixture’s lens.



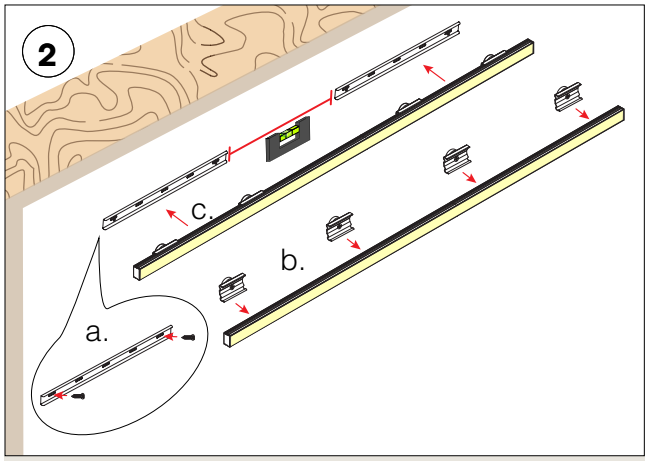

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## SURFACE MOUNTING METHOD: **MAGNET MOUNT**

- One magnet clip per foot
- MMA-01 comes in 12" pieces; use at least one clip per MMA-01 accessory
- MMA-01 can be cut into smaller pieces, if desired




Determine the LALO fixture(s) location and positioning on desired surface. Make any necessary reference markings to indicate where the magnet mount accessory bracket is to be secured in place.

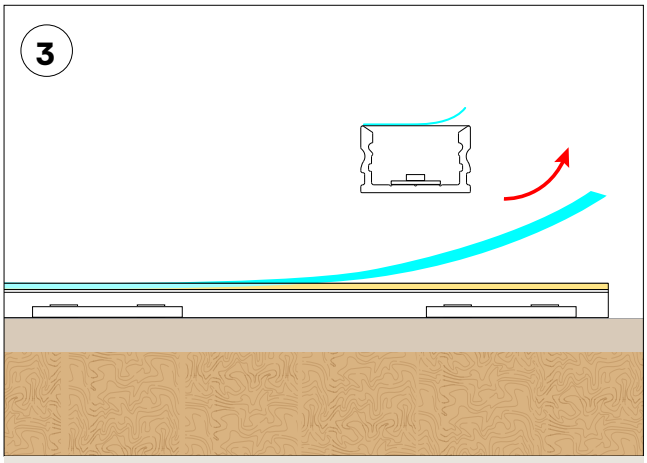



**a.** Mount the two #6 flat head screws into the 12" magnet mount accessory bracket through the slotted holes at each end. Ensure the screw head is flush with the magnet mount bracket.

**b.** Snap the magnet clips onto the backside of the fixture. They should be offset to the accessory bracket screws to maximize magnetic connection.

**c.** Place the assembled fixture into the magnet mount bracket.

**NOTE:** If surface application requires a longer screw, the screw size must be a #6 Flat Head.



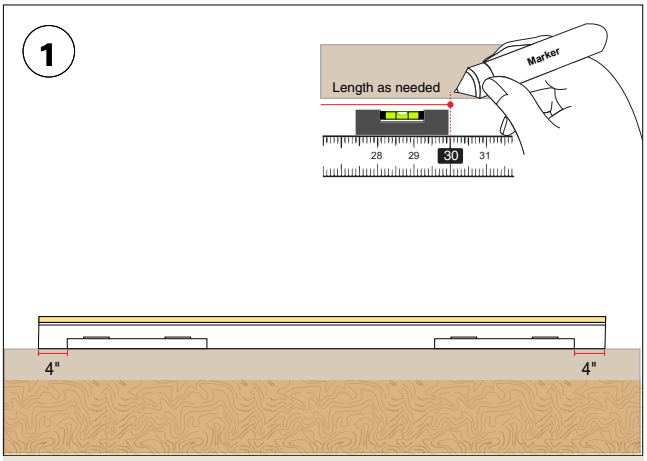

Remove protective film from the surface of the fixture's lens.



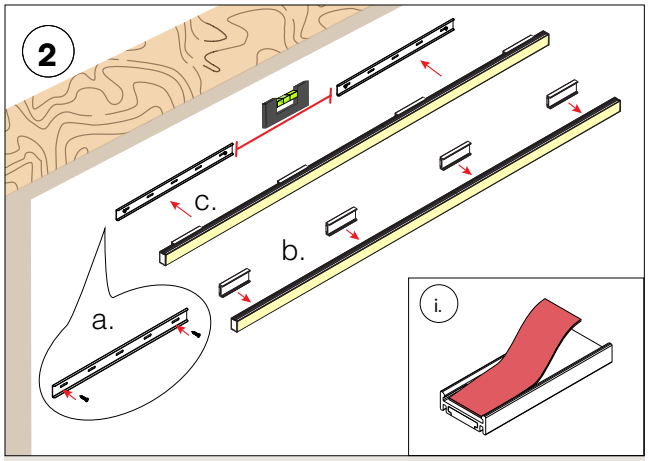
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## SURFACE MOUNTING METHOD: **LOW PROFILE MAGNET MOUNT**

- One magnet clip per foot
- MMA-04 comes in 12" pieces; use at least one clip per MMA-04 accessory
- MMA-04 can be cut into smaller pieces, if desired




Determine the LALO fixture(s) location and positioning on desired surface. Make any necessary reference markings to indicate where the magnet mount accessory bracket is to be secured in place.

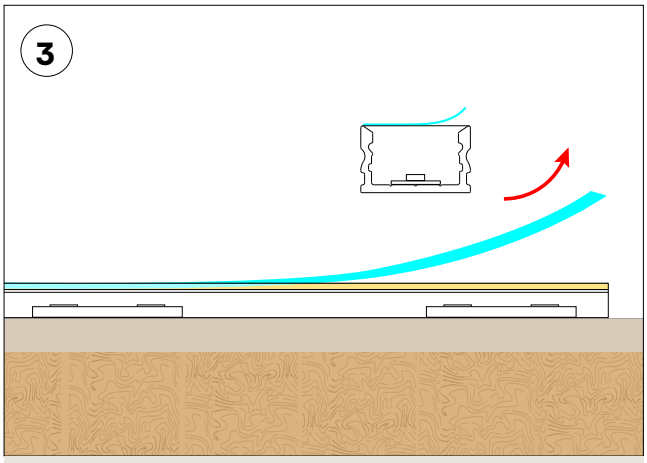



**a.** Mount the two #6 flat head screws into the magnet mount accessory bracket through the slotted holes at each end. Ensure the screw head is flush with the magnet mount bracket.

**b.** Snap the magnet clips onto the backside of the fixture. They should be offset to the accessory bracket screws to maximize magnetic connection.
i. If the clip does not fit securely onto the extrusion, apply the provided foam onto the inner face of the magnet clip.

**c.** Place the assembled fixture into the magnet mount bracket.

**NOTE:** If surface application requires a longer screw, the screw size must be a #6 Flat Head.



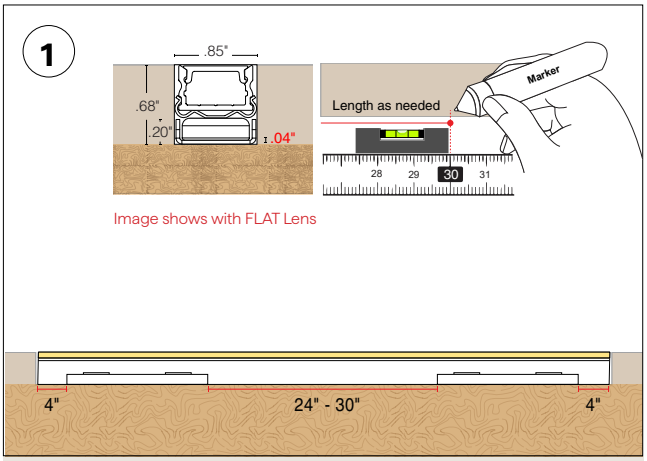

Remove protective film from the surface of the fixture's lens.



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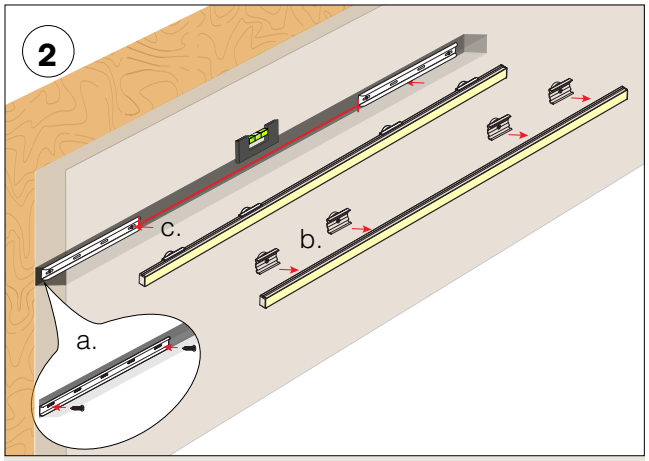
## RECESSED MOUNTING METHOD: **MILLWORK**

- One magnet clip per foot
- MMA-01 comes in 12" pieces; use at least one clip per MMA-01 accessory
- MMA-01 can be cut into smaller pieces, if desired




Determine the LALO fixture(s) location and positioning on desired surface. Make any necessary reference markings to indicate where the magnet mount accessory bracket is to be secured in place.

**NOTE:** Depth of the channel in the millwork is dependent on overall height with the magnet clip and Magnet Mount Accessory.

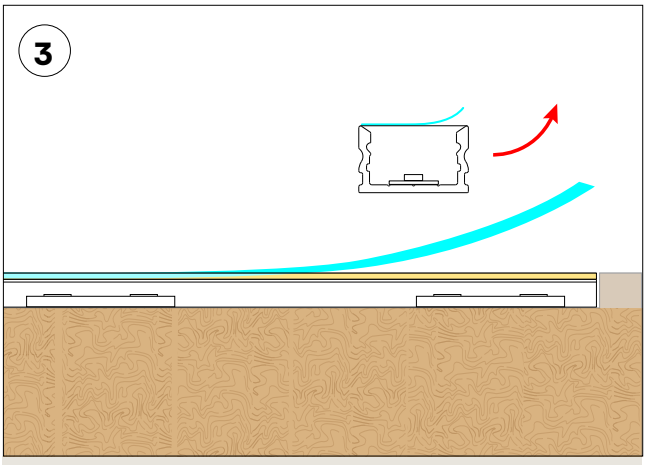



**a.** Mount the two #6 flat head screws into the 12" magnet mount accessory bracket through the slotted holes at each end. Ensure the screw head is flush with the magnet mount bracket.

**b.** Snap the magnet clips onto the backside of the fixture. They should be offset to the accessory bracket screws to maximize magnetic connection.

**c.** Place the assembled fixture into the magnet mount bracket.

**NOTE:** If surface application requires a longer screw, the screw size must be a #6 Flat Head.



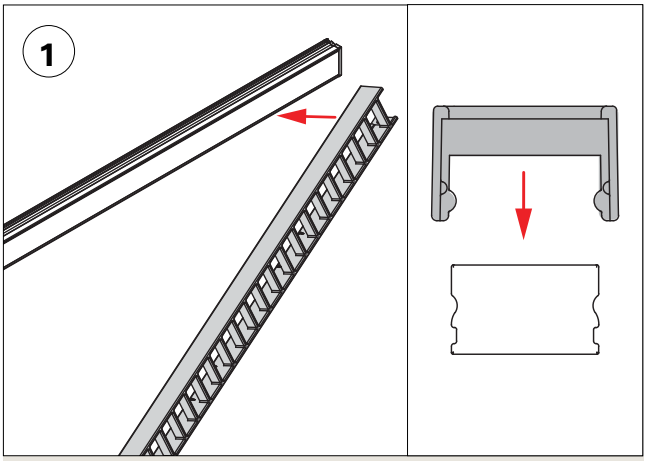

Remove protective film from the surface of the fixture's lens.



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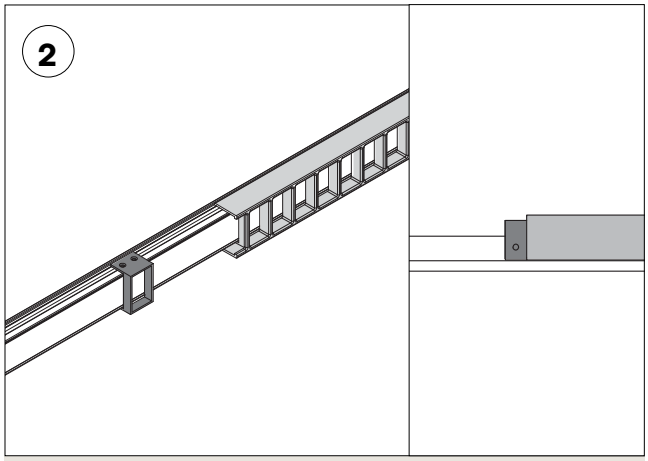
INSTALL METHOD: **LOUVER**

Louvers can be snapped onto the fixture either before or after it is mounted to the surface using the provided mounting clip.

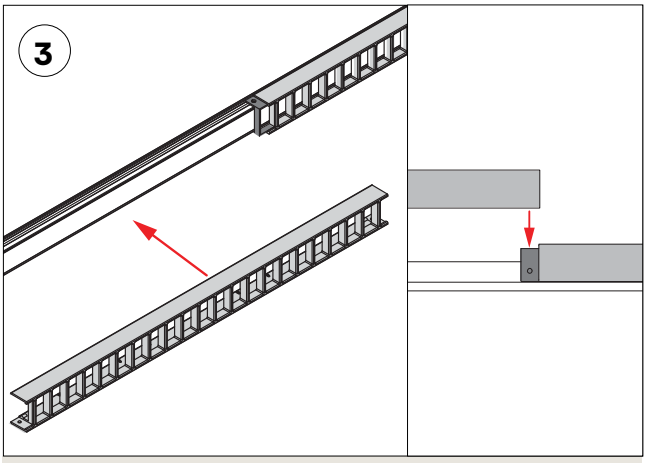



Snap the louver onto the fixture.

**NOTE:** Tilting the louver and snapping on one end first, then pressing down on the remaining length makes for an easier install.




Snap the louver connector onto the fixture, then slide it into the end of the mounted louver.




Snap the next louver onto the fixture and over the connector, the louver can also be slid into the connector.

**NOTE:** These plastic louvers are field-cuttable. We recommend trimming the last segment as needed and positioning the cut end at the fixture's edge for a clean finish.

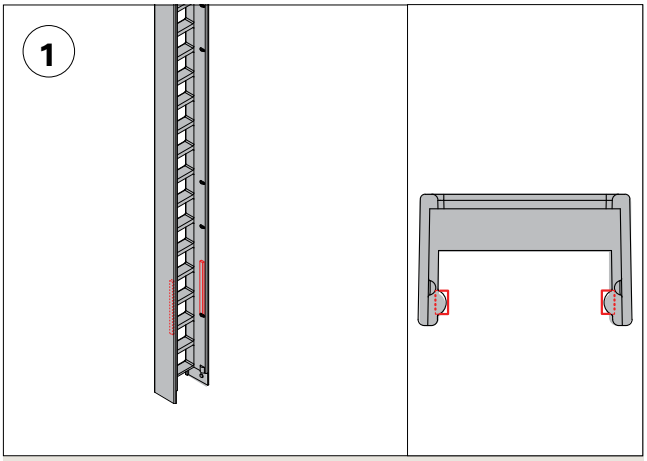


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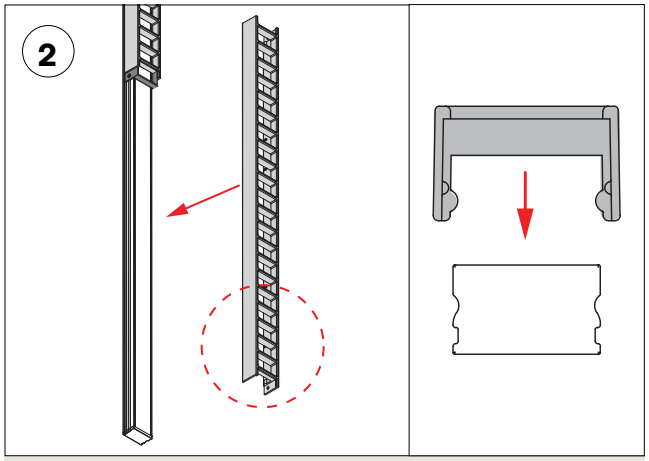
INSTALL METHOD: **LOUVER-GASKET**

Louvers can be snapped onto the fixture either before or after it is mounted to the surface using the provided mounting clip.

- When the fixture is mounted vertically, install a pair of gaskets on the inner side of the lowest louver to act as a stopper.




Remove the adhesive backing on the gasket, then place one on each side of the louver's inner walls, towards the bottom edge.




Snap last louver onto the fixture (should be lowest louver on fixture, when mounted vertically).




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# ESSENTIALS LALO-FLAT-SW(01)

Linear Fixtures Color Data

## LL1SW-5.0-30-DRY-STD-FR

3120 K

**CRI:** 98.2

**CRI R9:** 96.5

**TM30 Rf:** 94.3

**TM30 Rg:** 100.8

**CQS:** 95.4

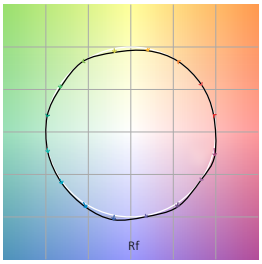
**X:** 0.428

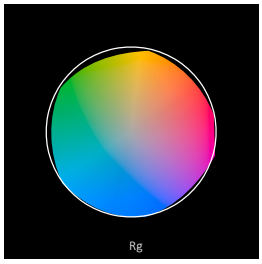
**Y:** 0.398

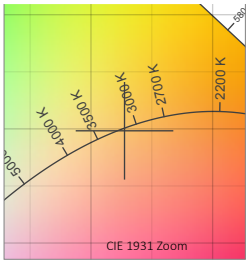
**U:** 0.247

**V:** 0.345

**Δuv:** -0.0010




| R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | R13 | R14 | R15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 98.2 | 99.4 | 96.8 | 98.9 | 98.6 | 97.1 | 98.5 | 98.4 | 96.5 | 99.0 | 96.5 | 83.0 | 98.3 | 97.2 | 98.3 |

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 93.7 | 97.0 | 91.8 | 92.4 | 95.4 | 98.3 | 95.6 | 97.3 | 97.3 | 97.3 | 97.9 | 98.4 | 98.4 | 96.5 | 95.7 |

| C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 | C10 | C11 | C12 | C13 | C14 | C15 | C16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 96.1 | 97.8 | 96.8 | 95.1 | 93.6 | 97.3 | 93.4 | 97.9 | 93.8 | 90.8 | 90.9 | 92.1 | 95.3 | 93.0 | 92.4 | 90.1 |

| TM30 | | | |
|---|---|---|---|
| Hue Bin | $R_f$ | Chroma | Hue |
| 1 | 96 | -1% | 1% |
| 2 | 98 | 0% | 0% |
| 3 | 97 | 0% | 0% |
| 4 | 95 | -2% | -1% |
| 5 | 94 | -4% | 1% |
| 6 | 97 | 0% | 1% |
| 7 | 93 | -2% | 3% |
| 8 | 98 | 0% | 1% |
| 9 | 94 | 0% | 4% |
| 10 | 91 | 1% | 6% |
| 11 | 91 | 3% | 6% |
| 12 | 92 | 5% | 0% |
| 13 | 95 | 1% | -3% |
| 14 | 93 | 4% | -4% |
| 15 | 92 | 0% | -2% |
| 16 | 90 | 2% | -8% |

## LL1SW-5.0-30-DRY-STD-PR

3134 K

**CRI:** 98.2

**CRI R9:** 97.6

**TM30 Rf:** 94.4

**TM30 Rg:** 101.0

**CQS:** 95.5

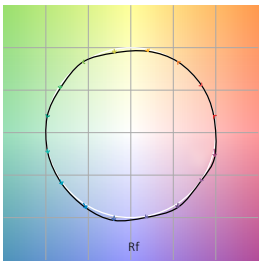
**X:** 0.427

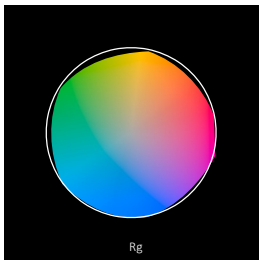
**Y:** 0.398

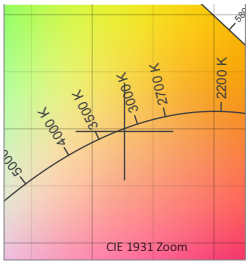
**U:** 0.247

**V:** 0.345

**Δuv:** -0.0011




| R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | R13 | R14 | R15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 98.0 | 99.4 | 96.5 | 98.6 | 98.5 | 97.2 | 98.8 | 98.8 | 97.6 | 98.9 | 96.4 | 83.2 | 98.2 | 97.0 | 98.1 |

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 94.0 | 97.1 | 91.8 | 92.4 | 95.6 | 98.3 | 95.5 | 97.3 | 97.2 | 97.2 | 97.9 | 98.3 | 98.3 | 96.5 | 95.9 |

| C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 | C10 | C11 | C12 | C13 | C14 | C15 | C16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 96.3 | 97.9 | 96.8 | 95.3 | 93.7 | 97.2 | 93.5 | 98.1 | 94.1 | 91.0 | 91.0 | 92.3 | 95.6 | 93.2 | 92.6 | 90.3 |

| TM30 | | | |
|---|---|---|---|
| Hue Bin | $R_f$ | Chroma | Hue |
| 1 | 96 | 0% | 1% |
| 2 | 98 | 0% | 0% |
| 3 | 97 | 0% | 0% |
| 4 | 95 | -2% | -1% |
| 5 | 94 | -4% | 1% |
| 6 | 97 | 0% | 1% |
| 7 | 94 | -2% | 3% |
| 8 | 98 | 0% | 1% |
| 9 | 94 | 0% | 4% |
| 10 | 91 | 1% | 5% |
| 11 | 91 | 3% | 6% |
| 12 | 92 | 5% | 0% |
| 13 | 96 | 1% | -3% |
| 14 | 93 | 4% | -3% |
| 15 | 93 | 0% | -2% |
| 16 | 90 | 2% | -8% |

**NOTES:**
- CRI R values, only R1-R8 are used to calculate RA CRI values
- TM30 C values, 16 binned values out of total of 99 C values
- CQS Q values
- Data subject to change, all data has +/- 5% tolerance

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# ESSENTIALS LALO-FLAT-SW(01)

Linear Fixtures Color Data

## LL1SW-5.0-30-DRY-STD-DF

3110 K

**CRI:** 98.2

**CRI R9:** 96.5

**TM30 Rf:** 94.4

**TM30 Rg:** 100.9

**CQS:** 95.4

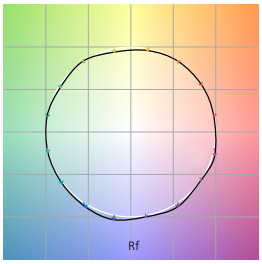
**X:** 0.428

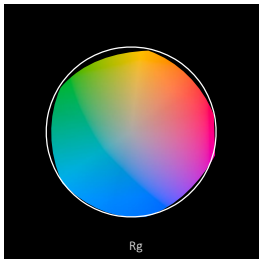
**Y:** 0.398

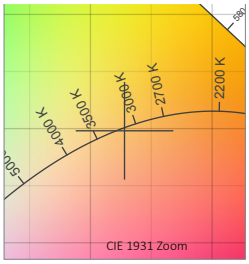
**U:** 0.247

**V:** 0.345

**Δuv:** -0.0011




| R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | R13 | R14 | R15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 98.2 | 99.3 | 96.8 | 98.8 | 98.6 | 97.2 | 98.5 | 98.4 | 96.5 | 98.9 | 96.6 | 83.5 | 98.3 | 97.1 | 98.4 |
| **Q1** | **Q2** | **Q3** | **Q4** | **Q5** | **Q6** | **Q7** | **Q8** | **Q9** | **Q10** | **Q11** | **Q12** | **Q13** | **Q14** | **Q15** |
| 94.0 | 97.0 | 91.8 | 92.4 | 95.5 | 98.2 | 95.4 | 97.1 | 97.3 | 97.1 | 97.7 | 98.4 | 98.5 | 96.4 | 95.8 |
| **C1** | **C2** | **C3** | **C4** | **C5** | **C6** | **C7** | **C8** | **C9** | **C10** | **C11** | **C12** | **C13** | **C14** | **C15** | **C16** |
| 96.3 | 97.9 | 96.8 | 95.3 | 93.8 | 97.3 | 93.6 | 98.1 | 94.1 | 91.1 | 91.1 | 92.3 | 95.4 | 93.1 | 92.6 | 90.3 |

| TM30 | | | |
|---|---|---|---|
| Hue Bin | $R_f$ | Chroma | Hue |
| 1 | 96 | -1% | 1% |
| 2 | 98 | 0% | 0% |
| 3 | 97 | 0% | 0% |
| 4 | 95 | -2% | -1% |
| 5 | 94 | -4% | 1% |
| 6 | 97 | 0% | 1% |
| 7 | 94 | -2% | 3% |
| 8 | 98 | 0% | 1% |
| 9 | 94 | 0% | 4% |
| 10 | 91 | 1% | 5% |
| 11 | 91 | 3% | 6% |
| 12 | 92 | 5% | 0% |
| 13 | 95 | 1% | -3% |
| 14 | 93 | 4% | -4% |
| 15 | 93 | 0% | -2% |
| 16 | 90 | 2% | -8% |

**NOTES:**
- CRI R values, only R1-R8 are used to calculate RA CRI values
- TM30 C values, 16 binned values out of total of 99 C values
- CQS Q values
- Data subject to change, all data has +/- 5% tolerance

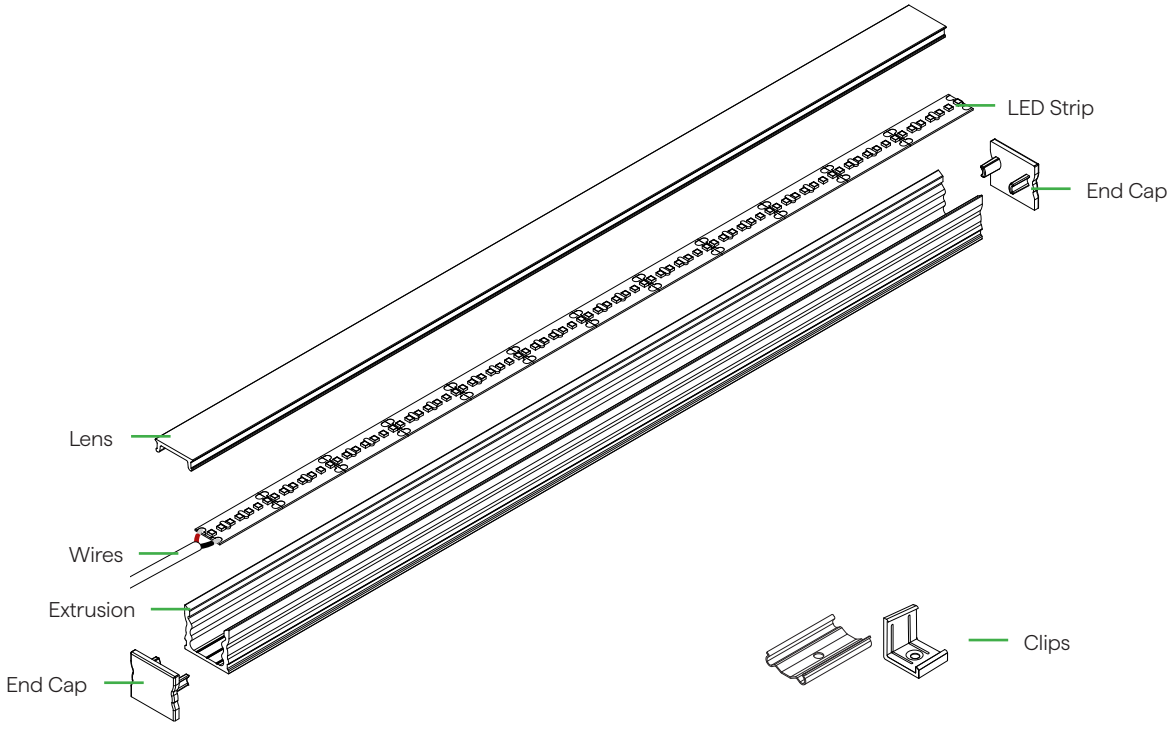
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# MATERIAL RECYCLING

LINEAR FIXTURES/EXTRUSIONS

You may be done with your products, but chances are they still have more to give. Follow these instructions to break down and sort recyclable components. Check with local recycling collection to ensure they accept the materials listed below.

Additionally, Q-Tran offers a Takeback Program. Contact factory for information.




| 7 | E | 41 | 40 |
|---|---|---|---|
| Lens<br>Plastic End Caps<br>Plastic Clips | LED Strip<br>Wires | Extrusion<br>Metal End Caps | Stainless Steel Clips |

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