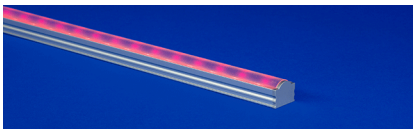
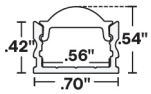
# ESSENTIALS LALO-OPTICS (02) STATIC COLOR

24VDC Linear Fixtures - Surface & Recessed






- Shallow, low-profile linear fixture for surface or recessed installations
- Produces a 17° beam angle
- Mounting options include stainless steel clips, magnets, and low-profile magnet mounts
- Features painted end caps to match extrusion finish
- Red, Green, Blue or Amber LEDs available
- Q-Tran Red & Amber LED products are Florida Fish and Wildlife Conservation Commission certified, making them safe for turtles and other wildlife
- 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

| 1 PRODUCT | 2 WATTS/ FT | 3 CCT | 4 RATED | 5 EFFICIENCY | 6 LENS | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LL2SC | 5.0 | | | STD | 17DEG | | | | | | | | | |

Sample Part Number: **LL2SC-5.0-GR-DRY-STD-17-P1-BW-BW-BK-CL2-SST-BK-48"-E**

## 1 PRODUCT

**LL2SC**

See following pages for compatible power supplies.

## 2 WATTS/FT

**5.0** 5.0W/ft

## 3 CCT

**A** Amber
**B** Blue
**G** Green
**R** Red

## 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

**17DEG** Optical 17°

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

**S1** Single 1 (Input only) - End Feed
**S2** Single 2 (Input only) - Bottom Feed

**P1** Pass Through 1 (Input/output) - End Feed
**P2** Pass Through 2 (Input/output) - 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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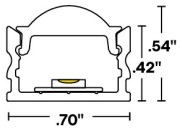
5 year warranty | Warranty only valid with QTL power supplies | Field modifications void warranty | Data subject to change, all data has +/- 5% tolerance | FWC rated Strips: DRY and WET rated, Red and Amber

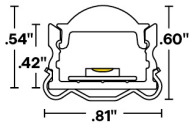
# ESSENTIALS LALO-OPTICS (02) STATIC COLOR

24VDC Linear Fixtures - Surface & Recessed

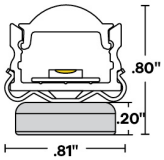
## 1 PRODUCT - DIMENSIONS



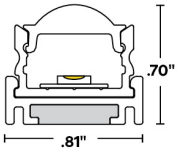

Profile with optical lens



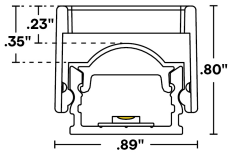

Profile with optical lens and stainless steel mounting clip



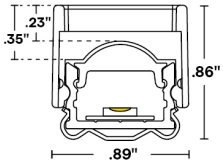

Profile with optical lens magnet mounting clip



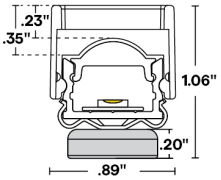

Profile with optical lens and low profile magnet



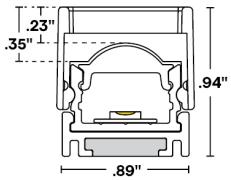

Profile with optical lens and plastic louver




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




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



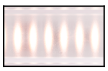

Profile with optical lens, low profile magnet, and plastic louver

## 2 DELIVERED LUMENS

[Calculated L70 = 30000 hrs]
Tested with LL2SC-5.0-**-DRY-STD

| | Red | | Green | | Blue | | Amber | |
|---|---|---|---|---|---|---|---|---|
| | LM/FT | WAVELENGTH | LM/FT | WAVELENGTH | LM/FT | WAVELENGTH | LM/FT | WAVELENGTH |
| 17 | 90 | 633 | 485 | 517 | 126 | 466 | 81 | 597 |

## 6 DIODE VISIBILITY

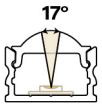


Optical lens

## PHOTOMETRIC PERFORMANCE

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

**17DEG**




Optical 17°

## TEMPERATURE RATINGS

| | | 5.0 W/FT | |
|---|---|---|---|
| | | Min | Max |
| DRY | Ambient Operating Temp - Surface | -4°F | 125°F |
| DMP | Ambient Operating Temp - Surface | -4°F | 120°F |
| WET | Ambient Operating Temp - Surface | -4°F | 120°F |

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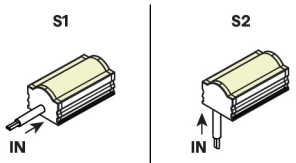
# ESSENTIALS LALO-OPTICS (02) STATIC COLOR

24VDC Linear Fixtures - Surface & Recessed

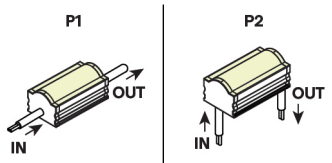
## 7 WIRE INPUT/OUTPUT

SINGLE (Input only)



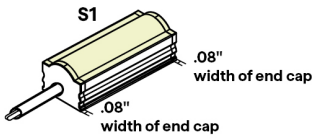

End Feed | Bottom Feed

PASS THROUGH (Input/Output)

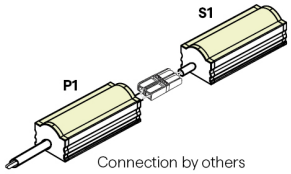



End Feed | Bottom Feed

## CONFIGURATION OPTIONS

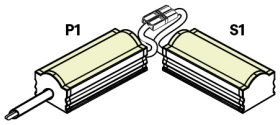



Single End Feed



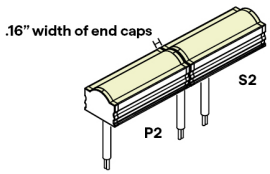

Connection by others

Non-Continuous End Feed

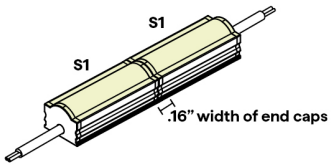



Connection by others

Non-Continuous Corner Feed



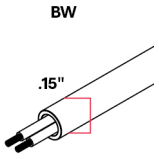

Continuous Bottom Feed



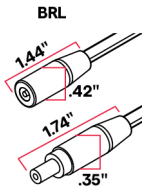

Continuous End to End Feed

## 8 / 9 CONNECTOR/WIRE – IN/OUT

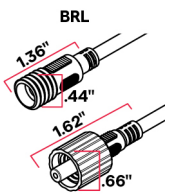
Connector/Wire In or Out not needed to specify product. Standard configuration is BW for Wire In and CLS for Wire out



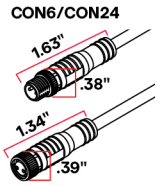

Bare Wire 24"
22 AWG




Barrel 6" - DRY/DMP | 22 AWG

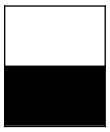



Barrel 6"- WET | 22 AWG




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

## 10 WIRE COLOR



White

Black

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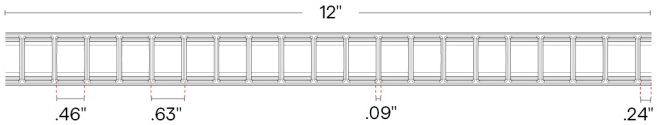
# ESSENTIALS LALO-OPTICS (02) STATIC COLOR

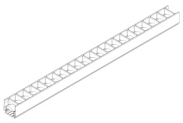
24VDC Linear Fixtures - Surface & Recessed

## EXTERNAL LOUVER ACCESSORY

**PLASTIC**

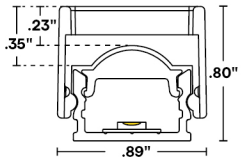



**L1-XX**



Lumen Multiplier

| WH | BK |
|---|---|
| 0.73 | 0.53 |

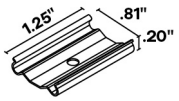



Profile with plastic louver

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

## 12 MOUNTING

**SST**



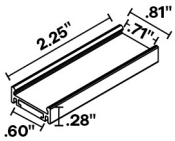

Stainless Steel Clip

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**

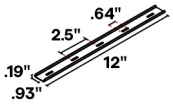



Low Profile Magnet

One M4 provided per foot.

To order separately use MG-04

**MMA-04**



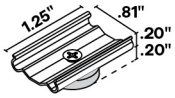

Magnet Mount Accessory for M4

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**

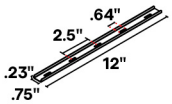



Magnet Clip

One MG provided per foot

To order separately use MG-01

**MMA-01**



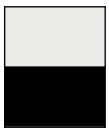

Magnet Mount Accessory of MG-01

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

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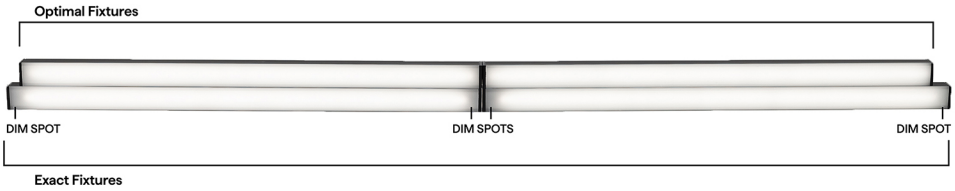
# ESSENTIALS LALO-OPTICS (02) STATIC COLOR

24VDC Linear Fixtures - Surface & Recessed

## 14 EXACT/OPTIMAL FIXTURE LENGTH

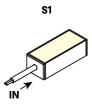
E/O Length Calculator →  E/O Explained →

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.

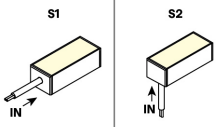
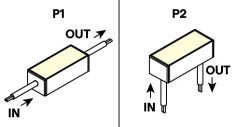



## SC DRY DMP LENGTHS BY INCH

### EXACT LENGTH

| Requested Length | Potential dim spot on either end of a S1 fixture   |
|---|---|
| 12" | 1" |
| 13" | 0.5" |
| 14" | 1" |
| 15" | 0.5" |
| 16" | 1" |
| 17" | 0.5" |
| 18" | 1" |
| 19" | 0.5" |
| 20" | 1" |
| 21" | 0.5" |
| 22" | 1" |
| 23" | 0.5" |
| 24" | 1" |
| 36" | 1" |
| 48" | 1" |
| 60" | 1" |
| 72" | 1" |
| 84" | 1" |
| 96" | 1" |

### OPTIMAL LENGTH

| Requested Nominal Length | S1 & S2   | P1 & P2   |
|---|---|---|
| 12" | 10.41" | 10.66" |
| 13" | 12.41" | 12.66" |
| 14" | 12.41" | 12.66" |
| 15" | 14.41" | 14.66" |
| 16" | 14.41" | 14.66" |
| 17" | 16.41" | 16.66" |
| 18" | 16.41" | 16.66" |
| 19" | 18.41" | 18.66" |
| 20" | 18.41" | 18.66" |
| 21" | 20.41" | 20.66" |
| 22" | 20.41" | 20.66" |
| 23" | 22.41" | 22.66" |
| 24" | 22.41" | 22.66" |
| 36" | 34.41" | 34.66" |
| 48" | 46.41" | 46.66" |
| 60" | 58.41" | 58.66" |
| 72" | 70.41" | 70.66" |
| 84" | 82.41" | 82.66" |
| 96" | 94.41" | 94.66" |

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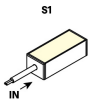
# ESSENTIALS LALO-OPTICS (02) STATIC COLOR

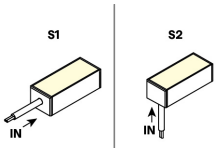
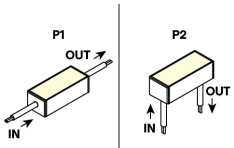
24VDC Linear Fixtures - Surface & Recessed

## SC WET LENGTHS BY INCH

### EXACT LENGTH

| Requested Length | Potential dim spot on either end of a S1 fixture   End Feed |
|---|---|
| 12" | 1" |
| 13" | 0.5" |
| 14" | 1" |
| 15" | 0.5" |
| 16" | 1" |
| 17" | 0.5" |
| 18" | 1" |
| 19" | 0.5" |
| 20" | 1" |
| 21" | 0.5" |
| 22" | 1" |
| 23" | 0.5" |
| 24" | 1" |
| 36" | 1" |
| 48" | 1" |
| 60" | 1" |
| 72" | 1" |
| 84" | 1" |
| 96" | 1" |

### OPTIMAL LENGTH

| Requested Nominal Length | S1 & S2   | | P1 & P2   | |
|---|---|---|---|---|
| | End Feed | Bottom Feed | End Feed | Bottom Feed |
| 12" | 10.61" | | 10.76" | |
| 13" | 12.61" | | 12.76" | |
| 14" | 12.61" | | 12.76" | |
| 15" | 14.61" | | 14.76" | |
| 16" | 14.61" | | 14.76" | |
| 17" | 16.61" | | 16.76" | |
| 18" | 16.61" | | 16.76" | |
| 19" | 18.61" | | 18.76" | |
| 20" | 18.61" | | 18.76" | |
| 21" | 20.61" | | 20.76" | |
| 22" | 20.61" | | 20.76" | |
| 23" | 22.61" | | 22.76" | |
| 24" | 22.61" | | 22.76" | |
| 36" | 34.61" | | 34.76" | |
| 48" | 46.61" | | 46.76" | |
| 60" | 58.61" | | 58.76" | |
| 72" | 70.61" | | 70.76" | |
| 84" | 82.61" | | 82.76" | |
| 96" | 94.61" | | 94.76" | |

## 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 |
|---|---|---|
| | SC | SC |
| **Dim to Black** | Q6M-DC+CAP<br>QTM-DC+CAP<br>iQ-PH+QD1 | 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-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+PS-DALI-DT6<br>QZ-DMX<br>QZ-PH/0-10V |
| **1%** | QTM-eLED(E)<br>QZ-DALI-DT6 | Q-SET+QZ-DALI-DT6<br>QZ-DALI-DT6 |
| **10%** | Non-Dim Power Supply with SW App Dongle | |

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# ESSENTIALS LALO-OPTICS (02) STATIC COLOR

24VDC Linear Fixtures - Surface & Recessed

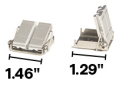
| DIMMING PROTOCOL | INDOOR | OUTDOOR |
|---|---|---|
| | SC | SC |
| **Non-Dim** | QT-CAB-eLED-ND<br>QTM-eLED-ND<br>QZ-ND | Q-SET-QZ-ND<br>Q-SET-eLED-ND<br>QOM-eLED-ND<br>QZ-ND |
| **Phase** | Q6M-DC+CAP<br>QT-CAB-QZ-PH/0-10V<br>QTM-DC+CAP<br>QTM-eLED(E)<br>QZ-BOWTIE+DIMMER<br>QZ-PH/0-10V<br>QZ-STICK-PH/0-10V<br>QZLP<br>iQ-PH+QD1 | Q-SET-QZ-PH/0-10V<br>QOM-DC+CAP<br>QOM-PH<br>QZ-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-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-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 | |
| **ECO System** | QTM-eLED(E) | |
| **DMX** | 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 | 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 | |

## 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

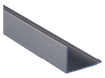
**NU-GRAZER**

U Mounting Bracket

**NJ-GRAZER**

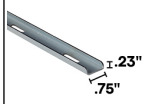
J Mounting Bracket

**BL-GRAZER**



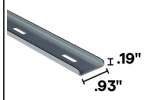
Backwards L Mounting Bracket

**MMA-01**




Magnet Mount Accessory of MG-01

**MMA-04**



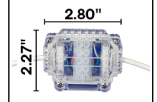

Magnet Mount Accessory of MG-04

## COMPATIBLE WIRING ACCESSORIES

**Q-mini-J**

UL Listed, miniature junction box, DRY/DMP (WET rated with silicone)

**Q-mini-J5**




UL Listed, miniature junction box, DRY/DMP (WET rated with silicone)

**BARREL-EXT**

8ft barrel cable extender
DRY ONLY

**BARREL FOUR-FER**

Splits lead from one to four LED Barrel connector fixtures, DRY/DMP

**CON120-EXT**

10ft Con cable extender
DRY/DMP/WET

**CON FOUR-FER**

Splits lead from one to four LED Con connectors
DRY/DMP/WET

**CON M - BARREL F**

Male con to barrel cable adaptor
DRY/DMP

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