

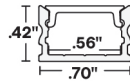


ESSENTIALS LALO-FLAT (01) WARM DIM APPLICATIONS

24VDC Linear Fixtures - Surface & Recessed



410.2 & 410.16
Closet Rated
in 1.5HE



- Shallow, low-profile fixture for surface or recessed installations
- Choose from diffused, polar, frosted, or clear 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
- Used in applications to provide warmer CCTs as the light is dimmed
- When using DALI and DMX power supplies, LED wattage must be doubled
- Optional plastic louver accessory available in white or black for added glare control

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---------|-----------|-----|-------|------------|------|-----------------------|-----------------------|------------------------|------------|-----------|----------|--------|-------------|-------------------|
| PRODUCT | WATTS/ FT | CCT | RATED | EFFICIENCY | LENS | WIRE INPUT/ OUTPUT | CONNECTOR/ WIRE IN | CONNECTOR/ WIRE OUT | WIRE COLOR | WIRE TYPE | MOUNTING | FINISH | LENGTH (IN) | EXACT/ OPTIMAL |
| | | | | STD | | | | | | | | | | |

Sample Part Number: **LL1WD-6.0-19/30-DRY-STD-DF-P1-BW-BW-BK-CL2-SST-BK-48"-E**

| | | | | | | | | | | | | | | |
|---|---|--|---|--|---|--|--|---|---|---|--|---|---|---|
| 1 PRODUCT LL1WD LED engine is built with 2 wires suitable for phase dimming control. See following pages for compatible power supplies. LL1DW LL1DW-USA Select USA option for BAA and BABA projects. Only DRY or WET ratings apply. LED engine is built with 3 wires requiring 0-10V, DMX or DALI control. Using DALI, DMX, or non QTL power supplies may double watts/ft. See following pages for compatible power supplies. | 2 WATTS/FT 6.0 6.0W/ft 1.5HE 1.5W/ft HE 2.5HE 2.5W/ft HE 1.5HE 1.5W/ft HE 2.5HE 2.5W/ft HE | 3 CCT 19/27 1900K/2700K 19/30 1900K/3000K 20/27 2000K/2700K 20/30 2000K/3000K 27/40 2700K/4000K 27/55 2700K/5500K 24/30 2400K/3000K 27/40 2700K/4000K | 4 RATED DRY IP20 WET IP67 Can be suitable for exterior use, contact factory for more information DRY IP20 WET IP67 Can be suitable for exterior use, contact factory for more information DMP IP54 | 5 EFFICIENCY STD Standard | 6 LENS DF Diffused PR Polar FR Frosted CL Clear 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 | 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" | 9 CONNECTOR/WIRE OUT CLS Closed End (No feed) BW Bare Wire (Standard 24") BRL Barrel CON6 Connector 6" CON24 Connector 24" | 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. |
|---|---|--|---|--|---|--|--|---|---|---|--|---|---|---|

For continuous mounting, consider bottom feed.

BRL only available with LL1WD
BW: Standard length is 24", Max length is 120".
Request custom length by writing in part number next to BW (example: BW48)

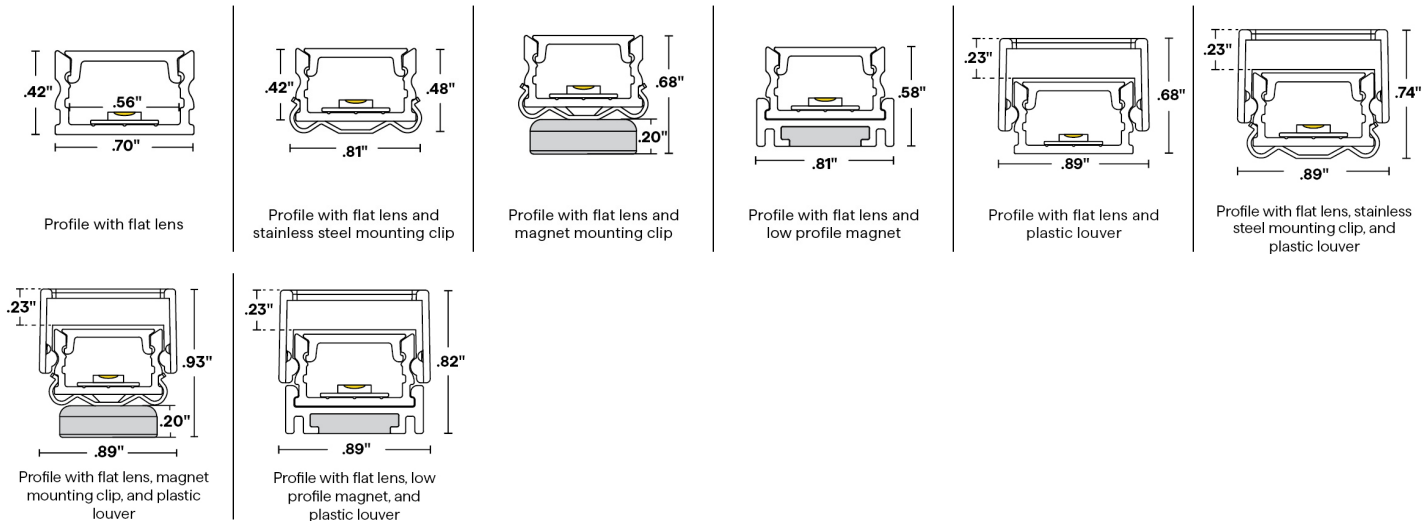
BRL only available with LL1WD
BW: Standard length is 24", Max length is 120".
Request custom length by writing in part number next to BW (example: BW48)



ESSENTIALS LALO-FLAT (01) WARM DIM APPLICATIONS

24VDC Linear Fixtures - Surface & Recessed

1 PRODUCT - DIMENSIONS



2 DELIVERED LUMENS

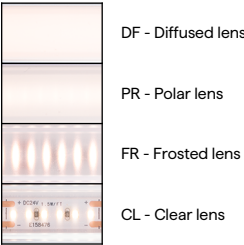
[Calculated L70 = 70000 hrs]
Tested with LL1VD-6.0-30-DRY-STD

| | 3000K | |
|----|-------|-----|
| | LM/FT | CRI |
| CL | 444 | 97 |
| FR | 441 | 97 |
| PR | 412 | 97 |
| DF | 362 | 97 |

[Calculated L70 = 70000 hrs]
Tested with LL1DW-**-30-DRY-STD

| | 1.5HE W/FT | | 2.5HE W/FT | |
|----|------------|-----|------------|-----|
| | LM/FT | CRI | LM/FT | CRI |
| CL | 140 | 98 | 222 | 98 |
| FR | 140 | 98 | 221 | 98 |
| PR | 126 | 98 | 199 | 98 |
| DF | 113 | 98 | 179 | 98 |

6 DIODE VISIBILITY



PHOTOMETRIC PERFORMANCE

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



Clear 78°



ESSENTIALS LALO-FLAT (01) WARM DIM APPLICATIONS

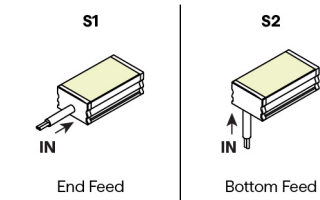
24VDC Linear Fixtures - Surface & Recessed

TEMPERATURE RATINGS

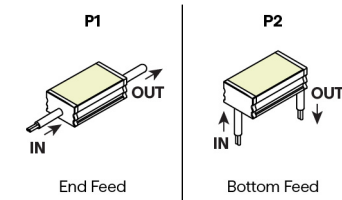
| | | WD 6.0 W/FT | | DW 1.5 HE W/FT | | DW 3.0 HE W/FT | | DW 2.5 HE W/FT | | DW 5.0 HE W/FT | |
|-----|----------------------------------|-------------|-------|---------------------------------------|-------|------------------------------------|-------|---------------------------------------|-------|------------------------------------|-------|
| | | | | QTL power supply other than DALI, DMX | | DALI, DMX, or non-QTL power supply | | QTL power supply other than DALI, DMX | | DALI, DMX, or non-QTL power supply | |
| | | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max |
| DRY | Ambient Operating Temp - Surface | -4°F | 115°F | -13°F | 105°F | -4°F | 120°F | -4°F | 135°F | -4°F | 120°F |
| DMP | Ambient Operating Temp - Surface | ** | ** | -4°F | 140°F | -4°F | 130°F | -4°F | 130°F | -4°F | 115°F |
| WET | Ambient Operating Temp - Surface | -4°F | 110°F | -4°F | 140°F | -4°F | 130°F | -4°F | 130°F | -4°F | 115°F |

7 WIRE INPUT/OUTPUT

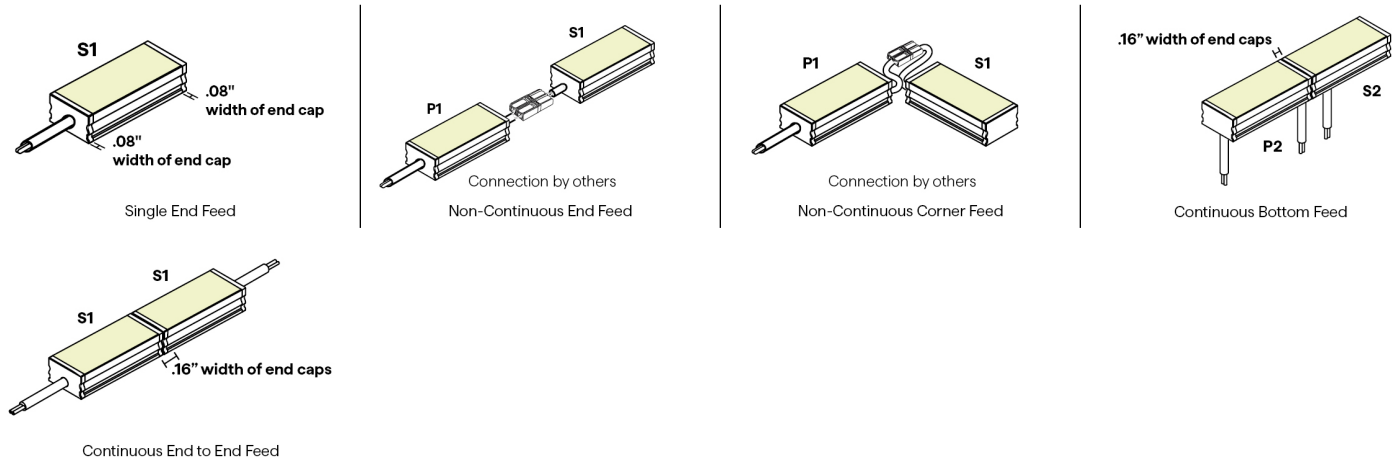
SINGLE (Input only)



PASS THROUGH (Input/Output)

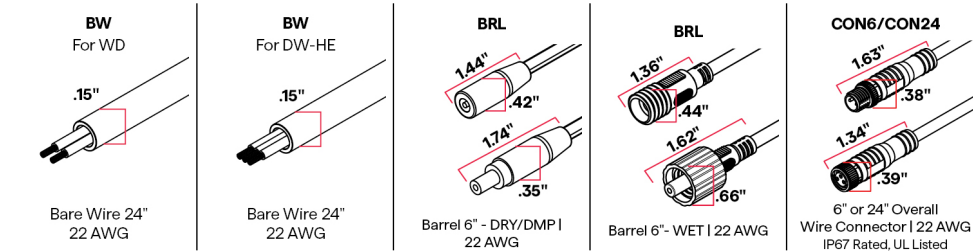


CONFIGURATION OPTIONS



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



10 WIRE COLOR



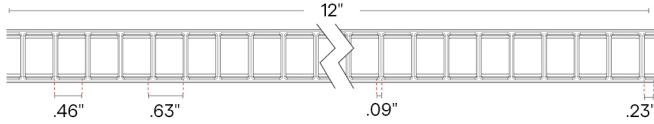


ESSENTIALS LALO-FLAT (01) WARM DIM APPLICATIONS

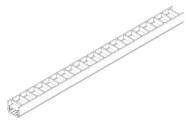
24VDC Linear Fixtures - Surface & Recessed

EXTERNAL LOUVER ACCESSORY

PLASTIC



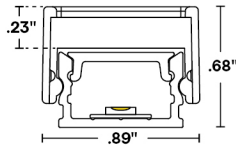
L1-XX



Lumen Multiplier

WH BK

0.72 0.51

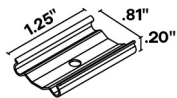


Profile with plastic louver

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

12 MOUNTING

SST



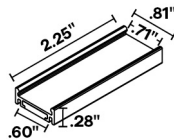
Stainless Steel Clip

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

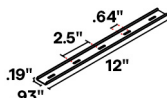


Low Profile Magnet

One M4 provided per foot.

To order separately use
MG-04

MMA-04



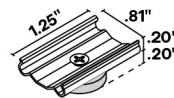
Magnet Mount
Accessory for M4

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

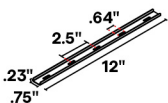


Magnet Clip

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



ESSENTIALS LALO-FLAT (01) WARM DIM APPLICATIONS

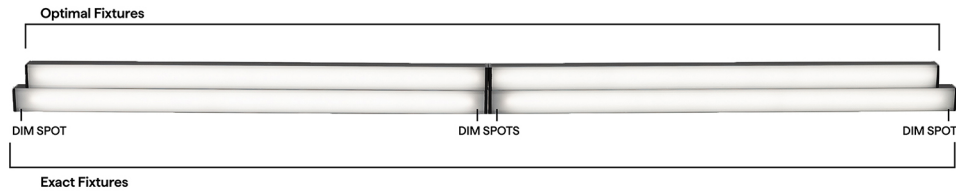
24VDC Linear Fixtures - Surface & Recessed

14 EXACT/OPTIMAL FIXTURE LENGTH

[E/O Length Calculator →](#)

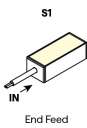
[E/O Explained →](#)

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.

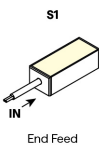
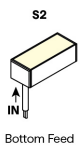
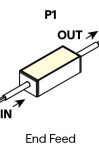
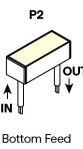


WD DRY LENGTHS BY INCH

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 | |
|--------------------------|---|---|---|--|
| | 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" | |



ESSENTIALS LALO-FLAT (01) WARM DIM APPLICATIONS

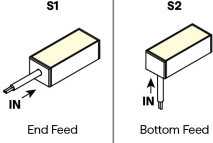
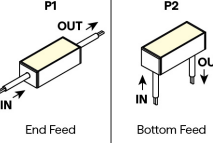
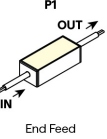
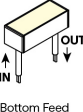
24VDC Linear Fixtures - Surface & Recessed

WD WET 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

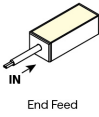
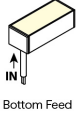
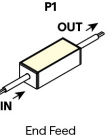
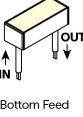
| Requested Nominal Length | S1 & S2  End Feed |  Bottom Feed | P1 & P2  End Feed |  Bottom Feed |
|--------------------------|--|--|--|---|
| 12" | 10.61" | | 10.76" | |
| 13" | 12.61" | | 12.76" | |
| 14" | 12.61" | | 12.76" | |
| 15" | 14.61" | | 14.76" | |
| 16" | 14.61" | | 14.76" | |
| 17" | 16.61" | | 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" | |

DW-HE 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  End Feed |  Bottom Feed | P1 & P2  End Feed |  Bottom Feed |
|--------------------------|--|--|--|---|
| 12" | 10.51" | | 10.86" | |
| 13" | 12.51" | | 12.86" | |
| 14" | 12.51" | | 12.86" | |
| 15" | 14.51" | | 14.86" | |
| 16" | 14.51" | | 14.86" | |
| 17" | 16.51" | | 16.86" | |
| 18" | 16.51" | | 16.86" | |
| 19" | 18.51" | | 18.86" | |
| 20" | 18.51" | | 18.86" | |
| 21" | 20.51" | | 20.86" | |
| 22" | 20.51" | | 20.86" | |
| 23" | 22.51" | | 22.86" | |
| 24" | 22.51" | | 22.86" | |
| 36" | 34.51" | | 34.86" | |
| 48" | 46.51" | | 46.86" | |
| 60" | 58.51" | | 58.86" | |
| 72" | 70.51" | | 70.86" | |
| 84" | 82.51" | | 82.86" | |
| 96" | 94.51" | | 94.86" | |

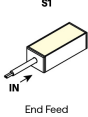


ESSENTIALS LALO-FLAT (01) WARM DIM APPLICATIONS

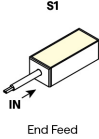
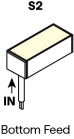
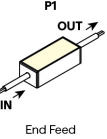
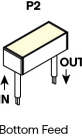
24VDC Linear Fixtures - Surface & Recessed

DW-HE WET 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 | |
|--------------------------|--|---|--|--|
| |  S1 End Feed |  S2 Bottom Feed |  P1 End Feed |  P2 Bottom Feed |
| 12" | | 10.66" | | 11.06" |
| 13" | | 12.66" | | 11.06" |
| 14" | | 12.66" | | 13.06" |
| 15" | | 14.66" | | 13.06" |
| 16" | | 14.66" | | 15.06" |
| 17" | | 16.66" | | 15.06" |
| 18" | | 16.66" | | 17.06" |
| 19" | | 18.66" | | 17.06" |
| 20" | | 18.66" | | 19.06" |
| 21" | | 20.66" | | 19.06" |
| 22" | | 20.66" | | 21.06" |
| 23" | | 22.66" | | 21.06" |
| 24" | | 22.66" | | 23.06" |
| 36" | | 34.66" | | 35.06" |
| 48" | | 46.66" | | 47.06" |
| 60" | | 58.66" | | 59.06" |
| 72" | | 70.66" | | 71.06" |
| 84" | | 82.66" | | 83.06" |
| 96" | | 94.66" | | 95.06" |

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 | |
|--------------|--|---|---|---|
| | DW-HE Warm Dim Applications | WD | DW-HE Warm Dim Applications | WD |
| 0.1% | QT-CAB-eLED+DALI-DT6 QT-CAB-eLED+DALI-DT8 QT-CAB-eLED+DALI-DT8-AWN QT-CAB-eLED+WD QT-CAB-eLED+WD-AWN QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT8 QTM-eLED+DALI-DT8-AWN QTM-eLED+WD QTM-eLED+WD-AWN QZ-DW | QT-CAB-QZ-PH/0-10V QT-CAB-eLED+0-10V QT-CAB-eLED+DALI-DT6 QT-CAB-eLED+DALI-DT6-AWN QTM-eLED+0-10V QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT6-AWN QZ-BOWTIE+DIMMER QZ-DMX QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP | Q-SET-QZ-DW QOM-eLED+DALI-DT6 QOM-eLED+DALI-DT8 QOM-eLED+PS-DALI-DT6 QOM-eLED+PS-DALI-DT8 QOM-eLED+WD QZ-DW | Q-SET-QZ-PH/0-10V Q-SET-eLED+0-10V QOM-eLED+0-10V QOM-eLED+DALI-DT6 QOM-eLED+PS-DALI-DT6 QZ-DMX QZ-PH/0-10V |
| 1% | QZ-DALI-DT8 | QTM-eLED(E) QZ-DALI-DT6 | Q-SET+QZ-DALI-DT8 QZ-DALI-DT8 | Q-SET+QZ-DALI-DT6 QZ-DALI-DT6 |
| 10% | Non-Dim Power Supply with WD App Dongle | Non-Dim Power Supply with SW App Dongle | | |


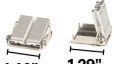



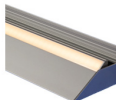



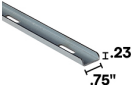



ESSENTIALS LALO-FLAT (01) WARM DIM APPLICATIONS

24VDC Linear Fixtures - Surface & Recessed

| DIMMING PROTOCOL | INDOOR | | OUTDOOR | |
|---|---|---|---|--|
| | DW-HE Warm Dim Applications | WD | DW-HE Warm Dim Applications | WD |
| Phase | QZ-DW | QT-CAB-QZ-PH/0-10V QTM-eLED(E) QZ-BOWTIE+DIMMER QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP | Q-SET-QZ-DW QZ-DW | Q-SET-QZ-PH/0-10V QZ-PH/0-10V |
| 0-10V | QT-CAB-eLED+WD QT-CAB-eLED+WD-AWN QTM-eLED+WD QTM-eLED+WD-AWN QZ-DW | QT-CAB-QZ-PH/0-10V QT-CAB-eLED+0-10V QTM-eLED+0-10V QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP | Q-SET-QZ-DW QOM-eLED+WD QZ-DW | Q-SET-QZ-PH/0-10V Q-SET-eLED+0-10V QOM-eLED+0-10V QZ-PH/0-10V |
| Lutron Athena | QT-CAB-eLED+DALI-DT8-AWN QT-CAB-eLED+WD-AWN QTM-eLED+DALI-DT8-AWN QTM-eLED+WD-AWN | QT-CAB-eLED+DALI-DT6-AWN QTM-eLED+DALI-DT6-AWN | | |
| ECO System | | QTM-eLED(E) | | |
| DMX If using DW LED, wattage must be doubled | | QZ-DMX | | QZ-DMX |
| DALI-2: DT6 If using DW LED, wattage must be doubled except for AWN | QT-CAB-eLED+DALI-DT6 QTM-eLED+DALI-DT6 | QT-CAB-eLED+DALI-DT6 QT-CAB-eLED+DALI-DT6-AWN QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT6-AWN QZ-DALI-DT6 | QOM-eLED+DALI-DT6 | Q-SET+QZ-DALI-DT6 QOM-eLED+DALI-DT6 QZ-DALI-DT6 |
| DALI-2: DT8 If using DW LED, wattage must be doubled except for AWN | QT-CAB-eLED+DALI-DT8 QT-CAB-eLED+DALI-DT8-AWN QTM-eLED+DALI-DT8 QTM-eLED+DALI-DT8-AWN QZ-DALI-DT8 | | Q-SET+QZ-DALI-DT8 QOM-eLED+DALI-DT8 QZ-DALI-DT8 | |
| SCENE App Dimmed | Non-Dim Power Supply with WD App Dongle | Non-Dim Power Supply with SW App Dongle | | |

COMPATIBLE MOUNTING ACCESSORIES

| | | | | | | | | | |
|--|--|---|--|--|--|--|---|---|---|
| HINGE - HMB-M  1.41" .71" Adjustable mounting bracket - Medium | HINGE - HMB-L  1.46" 1.29" Adjustable mounting bracket - Large | HINGE - HMB-XL  4" 1.46" Adjustable mounting bracket - XLarge | Q-PIVOT  .75" 1.03" Small mounting accessory | Q-ANGLE  2.23" 1.38" Adjustable mounting accessory | QUOVA-STANDARD  QUOVA Knife Edge | VHB  Double sided mounting tape | NJ-MEDIUM  J Mounting Bracket | SD-L-MEDIUM  L Mounting Bracket | MMA-01  .23" .75" Magnet Mount Accessory of MG-01 |
| MMA-04  .19" .93" Magnet Mount Accessory of MG-04 | | | | | | | | | |