



# ESSENTIALS LALO-OPTICS (02)

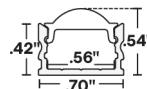
## WD APPLICATIONS

24VDC Linear Fixtures - Surface & Recessed



5 YEAR WARRANTY

Declare.



- 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
- 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

1 PRODUCT	2 WATTS/ FT	3 CCT	4 RATED	5 EFFICIENCY	6 LENS	7 EXTERNAL LOUVER	8 WIRE INPUT/ OUTPUT	9 CONNECTOR / WIRE IN	10 CONNECTOR / WIRE OUT	11 WIRE COLOR	12 WIRE TYPE	13 MOUNTING	14 FINISH	15 LENGTH (IN)	16 EXACT/ OPTIMAL
				STD	17DEG										

Sample Part Number: LL2WD-6.0-19/30-DRY-STD-17-P1-BW-BW-BK-CL2-SST-BK-48"-E

<b>1</b> <b>PRODUCT</b>  LL2WD  LED engine is built with 2 wires suitable for phase dimming control. See following pages for compatible power supplies.	<b>2</b> <b>WATTS/FT</b>  6.0 6.0W/ft	<b>3</b> <b>CCT</b>  19/27 1900K/2700K 19/30 1900K/3000K	<b>4</b> <b>RATED</b>  DRY IP20 WET IP67  Can be suitable for exterior use, contact factory for more information	<b>5</b> <b>EFFICIENCY</b>  STD Standard	<b>6</b> <b>LENS</b>  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	<b>7</b> <b>EXTERNAL LOUVER</b>  L1-WH White Plastic L1-BK Black Plastic N/A No Louver  Louvers are shipped separately and require field assembly
 LL2DW  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.	 1.5HE 1.5W/ft HE 2.5HE 2.5W/ft HE	 20/27 2000K/2700K 20/30 2000K/3000K 27/40 2700K/4000K 27/55 2700K/5500K	 DRY IP20 WET IP67  Can be suitable for exterior use, contact factory for more information	 DMP IP54		
 <b>8</b> <b>WIRE INPUT/OUTPUT</b>  S1 Single 1 (Input only) - End Feed S2 Single 2 (Input only) - Bottom Feed  For continuous mounting, consider bottom feed.	 <b>9</b> <b>CONNECTOR/WIRE IN</b>  BW Bare Wire (Standard 24") BRL Barrel CON6 Connector 6" CON24 Connector 24"  BRL only available with LL2WD. Connector/Wire In not needed to specify product. Typical selection is BW. BW: Standard length is 24", Max length is 120". Request custom length by writing in part number next to BW (example: BW48)	 <b>10</b> <b>CONNECTOR/WIRE OUT</b>  CLS Closed End (No feed)	 <b>11</b> <b>WIRE COLOR</b>  WH White BK Black N/A For Barrel  wet barrel only available in black			
 P1 Pass Through 1 (Input/output) - End Feed P2 Pass Through 2 (Input/output) - Bottom Feed  For continuous mounting, consider bottom feed.	 BW Bare Wire (Standard 24") BRL Barrel CON6 Connector 6" CON24 Connector 24"  BRL only available with LL2WD. Connector/Wire In not needed to specify product. Typical selection is BW. BW: Standard length is 24", Max length is 120". Request custom length by writing in part number next to BW (example: BW48)	 BW Bare Wire (Standard 24") BRL Barrel CON6 Connector 6" CON24 Connector 24"  BRL only available with LL2WD. Connector/Wire Out not needed to specify product. Typical selection is CLS or BW. BW: Standard length is 24", Max length is 120". Request custom length by writing in part number next to BW (example: BW48)				
 <b>12</b> <b>WIRE TYPE</b>  CL2 Class 2 CL2P Plenum Rated N/A For Barrel  CL2P only available with bare wire leads (BW)	 <b>13</b> <b>MOUNTING</b>  SST Stainless Steel M4 Low Profile Magnet MG Magnet	 <b>14</b> <b>FINISH</b>  ST Satin BK Black CU Custom	 <b>15</b> <b>LENGTH (IN)</b>  Fixture length min 12", max 98.43" not including end caps. Tolerance +0 - 1/8". Consult factory for lengths under 12".	 <b>16</b> <b>EXACT/OPTIMAL</b>  O Optimal Illumination E Exact Specified Length  Exact fixtures are the exact length specified +0 - 1/8". Optimal fixtures' length is rounded down with illumination end to end. See Exact/Optimal Fixture Length charts.		

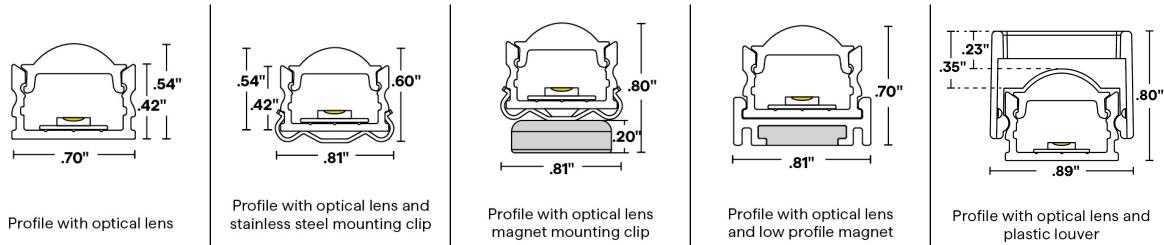
5 year warranty | Warranty only valid with QTL power supplies | Field modifications void warranty | Data subject to change, all data has +/- 5% tolerance



# ESSENTIALS LALO-OPTICS (02) WD APPLICATIONS

24VDC Linear Fixtures - Surface & Recessed

## 1 PRODUCT - DIMENSIONS



## 2 DELIVERED LUMENS

[Calculated L70 = 70000 hrs]  
Tested with LL2WD-6.0-30-DRY-STD

[Calculated L70 = 70000 hrs]  
Tested with LL2DW-\*\*-30-DRY-STD

	3000K
LM/FT	CRI
17	454

	1.5HE W/FT		2.5HE W/FT	
	LM/FT	CRI	LM/FT	CRI
17	153	98	242	98

## 6 DIODE VISIBILITY

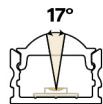


Optical lens

## 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

		DW 1.5 HE W/FT				DW 2.5 HE W/FT			
		WD 6.0 W/FT		Q-Tran power supply other than DALI, DMX		DALI, DMX, or non-Q-Tran power supply		Q-Tran power supply other than DALI, DMX	
		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
DMP	Ambient Operating Temp - Surface	**	**	-4°F	140°F	-4°F	130°F	-4°F	130°F
WET	Ambient Operating Temp - Surface	-4°F	110°F	-4°F	140°F	-4°F	130°F	-4°F	130°F

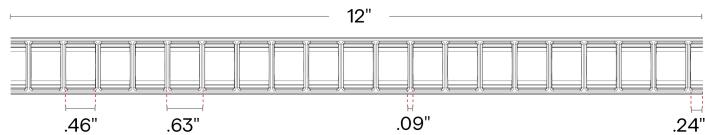


## ESSENTIALS LALO-OPTICS (02) WD APPLICATIONS

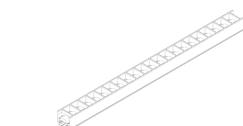
24VDC Linear Fixtures - Surface & Recessed

### 7 EXTERNAL LOUVER

#### PLASTIC



L1-XX



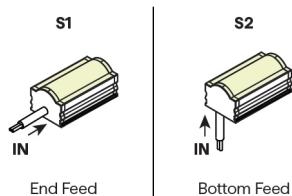
Lumen Multiplier

WH BK

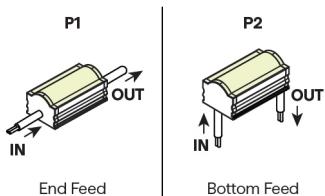
0.72 0.53

### 8 WIRE INPUT/OUTPUT

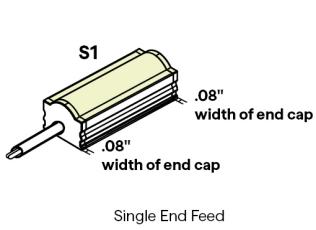
#### SINGLE (Input only)



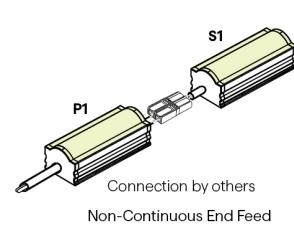
#### PASS THROUGH (Input/Output)



### CONFIGURATION OPTIONS

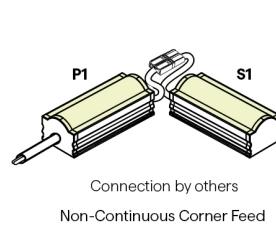


Single End Feed



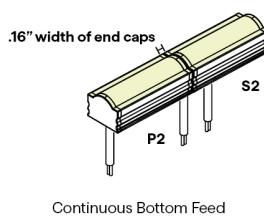
Connection by others

Non-Continuous End Feed

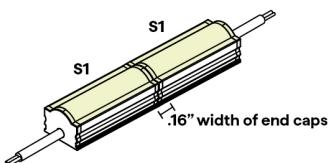


Connection by others

Non-Continuous Corner Feed



Continuous Bottom Feed



Continuous End to End Feed

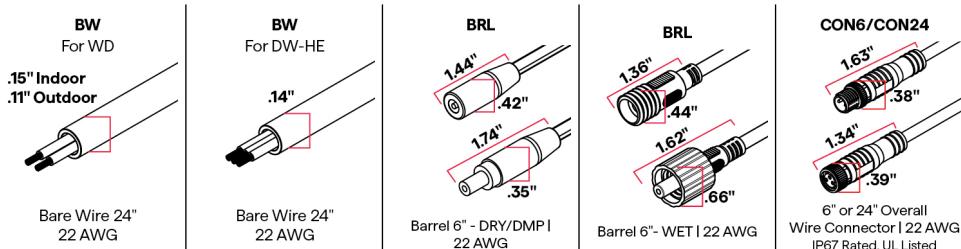


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### 9 / 10 CONNECTOR/WIRE – IN/OUT

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



### 13 MOUNTING

SST	M4	MMA-04	MG
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	Low Profile Magnet One M4 provided per foot. To order separately use MG-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	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

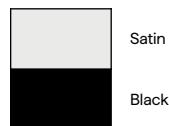
### 11 WIRE COLOR



White

Black

### 14 FINISH



Satin

Black

Custom color available



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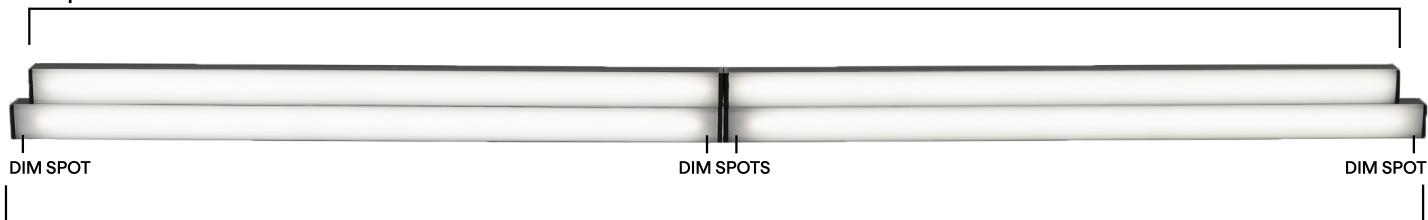
### 16 EXACT/OPTIMAL FIXTURE LENGTH

[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.

#### Optimal Fixtures



#### Exact Fixtures

### WD, DW-HE DRY, DMP LENGTHS BY INCH

Available in any length in between 12" and 98.43", chart below shows example lengths. Exact fixtures are the length specified. Optimal fixtures' length is rounded down with illumination end to end. All fixtures' tolerance is  $+0 - 1/8"$ . Consult factory for lengths under 12".

#### EXACT LENGTH

Requested Length	Potential dim spot on either end of 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: highlighted rows are closest to requested nominal length

Requested Nominal Length	S1 & S2		P1 & P2	
	S1 End Feed	S2 Bottom Feed	P1 End Feed	P2 Bottom Feed
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-OPTICS (02) WD APPLICATIONS

24VDC Linear Fixtures - Surface & Recessed

## WD, DW-HE WET LENGTHS BY INCH

Available in any length in between 12" and 98.43", chart below shows example lengths. Exact fixtures are the length specified. Optimal fixtures' length is rounded down with illumination end to end. All fixtures' tolerance is  $+0 - 1/8"$ . Consult factory for lengths under 12".

### EXACT LENGTH

Requested Length	Potential dim spot on either end of 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: highlighted rows are closest to requested nominal length

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

## COMPATIBLE POWER SUPPLIES

See power supplies cut sheets for more information. Data subject to change, all data has  $\pm 5\%$  tolerance.

DIM TO LEVEL	INDOOR	
	DW-HE Warm Dim Applications	WD
0.1%	QT-CAB-QZ-PH/0-10V 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-BOWTIE+DIMMER QZ-DMX QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP
1%	QT-CAB-eLED+DALI-DT6 QT-CAB-eLED+DALI-DT8 QT-CAB-eLED+DALI-DT8-AWN QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT8 QTM-eLED+DALI-DT8-AWN QZ-DALI-DT8	QT-CAB-eLED+DALI-DT6 QT-CAB-eLED+DALI-DT6-AWN QTM-eLED QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT6-AWN QZ-DALI-DT8
10%	Non-Dim Power Supply with WD App Dongle	Non-Dim Power Supply with SW App Dongle



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DIMMING PROTOCOL	INDOOR	
	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
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
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
DALI-2: DT6 If using DW LED, wattage must be doubled	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
DALI-2: DT8 If using DW LED, wattage must be doubled	QT-CAB-eLED+DALI-DT8 QT-CAB-eLED+DALI-DT8-AWN QTM-eLED+DALI-DT8 QTM-eLED+DALI-DT8-AWN 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

<b>HINGE - HMB-M</b> 1.41" 1.41" .71" .71"	<b>HINGE - HMB-L</b> 1.46" 1.46" 1.29" 1.29"	<b>HINGE - HMB-XL</b> 4" 1.46"	<b>Q-PIVOT</b> 7.5" 1.03"	<b>Q-ANGLE</b> 2.23" 1.38"	<b>VHB</b> Double sided mounting tape	<b>NU-GRAZER</b> U Mounting Bracket	<b>NJ-GRAZER</b> J Mounting Bracket	<b>BL-GRAZER</b> Backwards L Mounting Bracket
Adjustable mounting bracket - Medium	Adjustable mounting bracket - Large	Adjustable mounting bracket - XLarge	Small mounting accessory	Adjustable mounting accessory				

## COMPATIBLE WIRING ACCESSORIES

<b>Q-mini-J5</b> 2.27" 2.27" 2.80" 2.80"	<b>BARREL-EXT</b> 8ft barrel cable extender DRY ONLY	<b>BARREL-FOUR-FER</b> Splits lead from one to four LED Barrel connector fixtures, DRY/DMP	<b>CON120-EXT</b> 10ft Con cable extender DRY/DMP/WET	<b>CON FOUR-FER</b> Splits lead from one to four LED Con connectors DRY/DMP/WET	<b>CON M - BARREL F</b> Male con to barrel cable adaptor DRY/DMP
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## ESSENTIALS LALO-OPTICS (02) WD APPLICATIONS

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### COMPATIBLE CONTROL ACCESSORIES

#### SCENE APP DONGLE



Wi-Fi or Bluetooth  
Connectivity