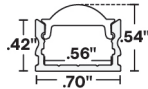
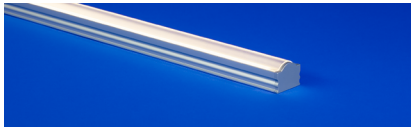




# ESSENTIALS LALO-OPTICS (02)

## WD APPLICATIONS

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

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

<div>1</div> <div>PRODUCT</div> <div>LL2WD</div> <div>LED engine is built with 2 wires suitable for phase dimming control. See following pages for compatible power supplies.</div>	<div>2</div> <div>WATTS/FT</div> <div>6.06.0W/ft</div>	<div>3</div> <div>CCT</div> <div>19/271900K/2700K 19/301900K/3000K</div>	<div>4</div> <div>RATED</div> <div>DRYIP20 WETIP67</div> <div>Can be suitable for exterior use, contact factory for more information</div>	<div>5</div> <div>EFFICIENCY</div> <div>STDStandard</div>	<div>6</div> <div>LENS</div> <div>17DEGOptical 17°</div> <div>For representation of LED visibility, see Diode Visibility section on following pages. For beam angles, see Photometric Performance section on following pages</div>	<div>7</div> <div>EXTERNAL LOUVER</div> <div>L1-WHWhite Plastic L1-BKBlack Plastic N/ANo Louver</div> <div>Louvers are shipped separately and require field assembly</div>
<div>LL2DW</div> <div>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.</div>	<div>1.5HE1.5W/ft HE 2.5HE2.5W/ft HE</div>	<div>20/272000K/2700K 20/302000K/3000K 27/402700K/4000K 27/552700K/5500K</div>	<div>DRYIP20 WETIP67</div> <div>Can be suitable for exterior use, contact factory for more information</div>			
	<div>1.5HE1.5W/ft HE 2.5HE2.5W/ft HE</div>	<div>24/302400K/3000K 27/402700K/4000K</div>	<div>DMPIP54</div>			

<div>8</div> <div>WIRE INPUT/OUTPUT</div> <div>S1Single 1 (Input only) - End Feed S2Single 2 (Input only) - Bottom Feed</div> <div>For continuous mounting, consider bottom feed.</div>	<div>9</div> <div>CONNECTOR/WIRE IN</div> <div>BWBare Wire (Standard 24") BRLBarrel CON6Connector 6" CON24Connector 24"</div> <div>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)</div>	<div>10</div> <div>CONNECTOR/WIRE OUT</div> <div>CLSClosed End (No feed)</div>	<div>11</div> <div>WIRE COLOR</div> <div>WHWhite BKBlack N/AFor Barrel</div> <div>wet barrel only available in black</div>
<div>P1Pass Through 1 (Input/output) - End Feed P2Pass Through 2 (Input/output) - Bottom Feed</div> <div>For continuous mounting, consider bottom feed.</div>	<div>BWBare Wire (Standard 24") BRLBarrel CON6Connector 6" CON24Connector 24"</div> <div>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)</div>	<div>BWBare Wire (Standard 24") BRLBarrel CON6Connector 6" CON24Connector 24"</div> <div>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)</div>	

<div>12</div> <div>WIRE TYPE</div> <div>CL2Class 2 CL2PPlenum Rated N/AFor Barrel</div> <div>CL2P only available with bare wire leads (BW)</div>	<div>13</div> <div>MOUNTING</div> <div>SSTStainless Steel M4Low Profile Magnet MGMagnet</div>	<div>14</div> <div>FINISH</div> <div>STSatin BKBlack CUCustom</div>	<div>15</div> <div>LENGTH (IN)</div> <div>Fixture length min 12", max 98.43" not including end caps. Tolerance +0 – 1/8". Consult factory for lengths under 12".</div>	<div>16</div> <div>EXACT/OPTIMAL</div> <div>OOptimal Illumination EExact Specified Length</div> <div>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.</div>
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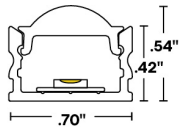
5 year warranty | Warranty only valid with QTL power supplies | Field modifications void warranty | Data subject to change, all data has +/- 5% tolerance



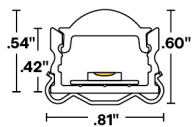
# ESSENTIALS LALO-OPTICS (02) WD APPLICATIONS

## 24VDC Linear Fixtures - Surface & Recessed

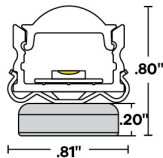
### 1 PRODUCT - DIMENSIONS



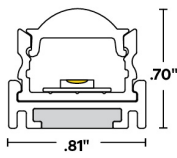
Profile with optical lens



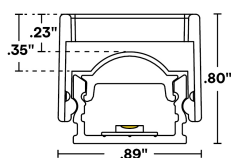
Profile with optical lens and stainless steel mounting clip



Profile with optical lens magnet mounting clip



Profile with optical lens and low profile magnet



Profile with optical lens and plastic louver

### 2 DELIVERED LUMENS

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

	3000K	
	LM/FT	CRI
17	454	98

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

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

### 6 DIODE VISIBILITY

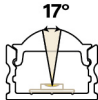


Optical lens

### 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		DALI, DMX, or non-Q-Tran 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

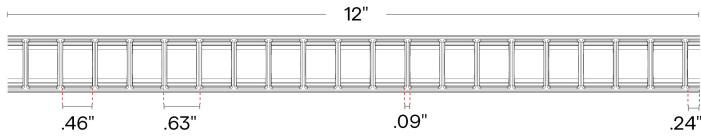


# ESSENTIALS LALO-OPTICS (02) WD APPLICATIONS

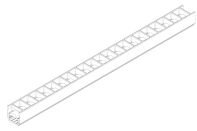
24VDC Linear Fixtures - Surface & Recessed

## 7 EXTERNAL LOUVER

PLASTIC



L1-XX



Lumen Multiplier

WH

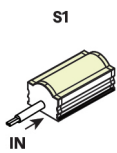
BK

0.72

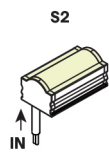
0.53

## 8 WIRE INPUT/OUTPUT

SINGLE (Input only)

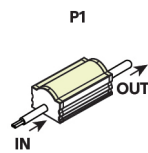


End Feed

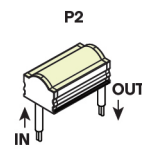


Bottom Feed

PASS THROUGH (Input/Output)

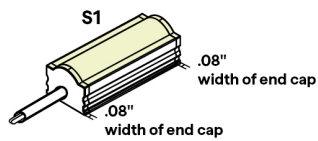


End Feed

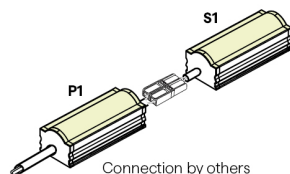


Bottom Feed

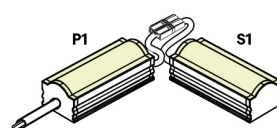
## CONFIGURATION OPTIONS



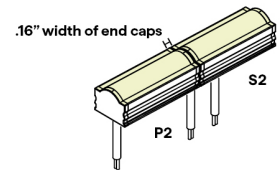
Single End Feed



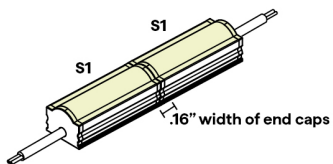
Connection by others  
Non-Continuous End Feed



Connection by others  
Non-Continuous Corner Feed



Continuous Bottom Feed



Continuous End to End Feed

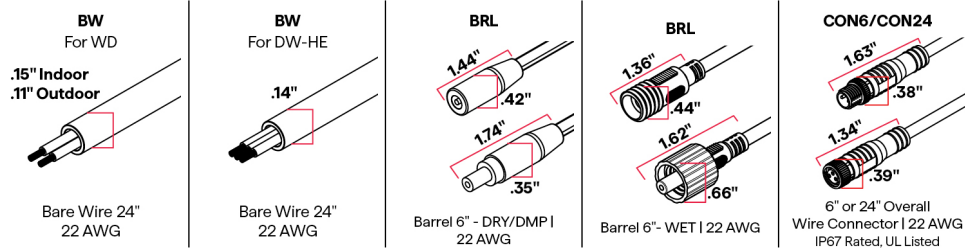


# ESSENTIALS LALO-OPTICS (02) WD APPLICATIONS

24VDC Linear Fixtures - Surface & Recessed

## 9 / 10 CONNECTOR/WIRE - IN/OUT

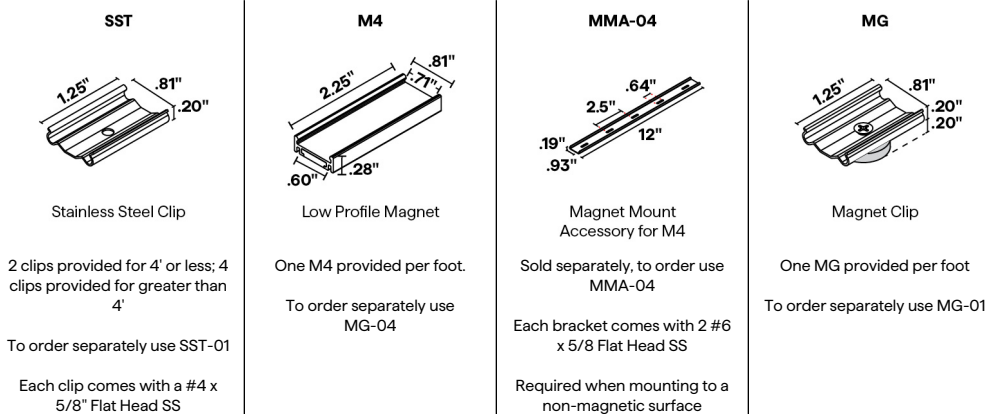
Connector/Wire In or Out not needed to specify product. Standard configuration is BW for Wire In and CLS for Wire out



## 11 WIRE COLOR



## 13 MOUNTING

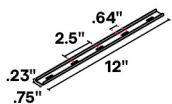


## 14 FINISH



Custom color available

### 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



# ESSENTIALS LALO-OPTICS (02) WD APPLICATIONS

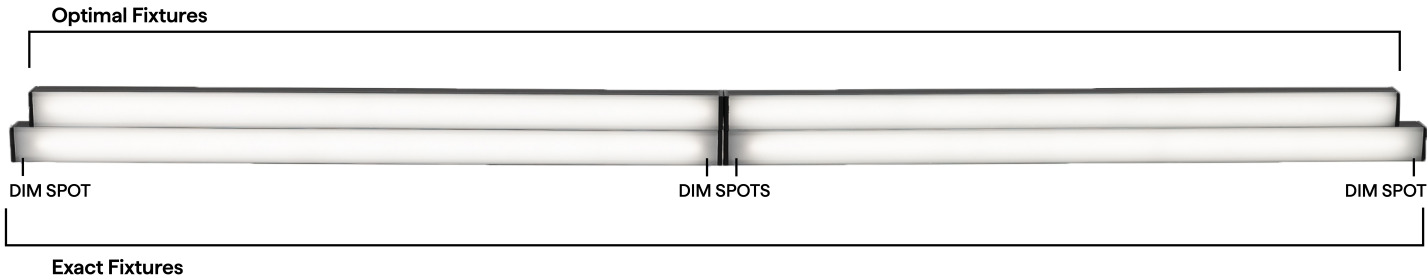
## 24VDC Linear Fixtures - Surface & Recessed

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.



### 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

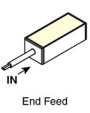
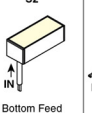
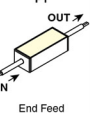
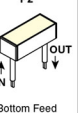
### WD, DW-HE WET LENGTHS BY INCH

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	
				
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	
	DW-HE Warm Dim Applications	WD
0.1%	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-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(E) QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT6-AWN QZ-DALI-DT6
10%	Non-Dim Power Supply with WD App Dongle	Non-Dim Power Supply with SW App Dongle


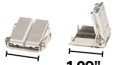






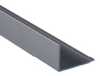


# ESSENTIALS LALO-OPTICS (02) WD APPLICATIONS

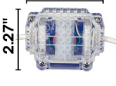





24VDC Linear Fixtures - Surface & Recessed

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" .71" Adjustable mounting bracket - Medium	<b>HINGE - HMB-L</b>  1.46" 1.29" Adjustable mounting bracket - Large	<b>HINGE - HMB-XL</b>  1.46" 4" Adjustable mounting bracket - XLarge	<b>Q-PIVOT</b>  1.03" .75" Small mounting accessory	<b>Q-ANGLE</b>  1.38" 2.23" Adjustable mounting accessory	<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
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## COMPATIBLE WIRING ACCESSORIES

<b>Q-mini-J5</b>  2.80" 2.27" UL Listed, miniature junction box, DRY/DMP (WET rated with silicone)	<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

24VDC Linear Fixtures - Surface & Recessed

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## COMPATIBLE CONTROL ACCESSORIES

### SCENE APP DONGLE



Wi-Fi or Bluetooth  
Connectivity