



ESSENTIALS LALO-OPTICS (02)

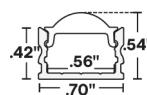
TUNABLE APPLICATIONS

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 where CCT and brightness need to be controlled separately
- 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
LL2DW				STD	17DEG										

Sample Part Number: LL2DW-2.5HE-20/30-DRY-STD-17-P1-BW-BW-BK-CL2-SST-BK-48"-E

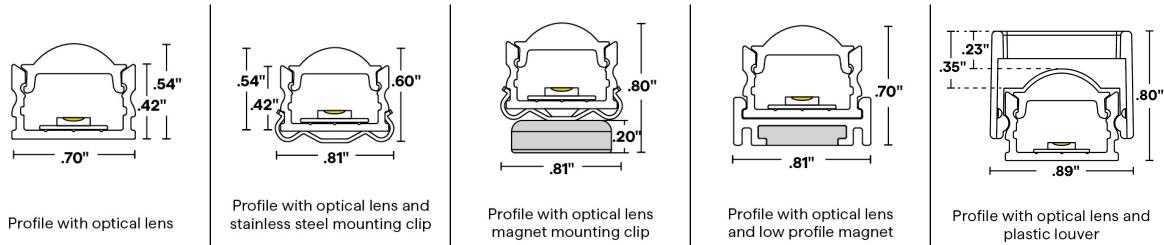
1 PRODUCT LL2DW LED engine is built with 3 wires requiring 0-10V, DMX or DALI control. Using DALI, DMX, or non QTL power supplies may double watts/ft. See following pages for compatible power supplies.	2 WATTS/FT 1.5HE 1.5W/ft HE 2.5HE 2.5W/ft HE 1.5HE 1.5W/ft HE 2.5HE 2.5W/ft HE	3 CCT 20/27 2000K/2700K 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	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	7 EXTERNAL LOUVER L1-WH White Plastic L1-BK Black Plastic N/A No Louver Louvers are shipped separately and require field assembly
8 WIRE INPUT/OUTPUT S1 Single 1 (Input only) - End Feed S2 Single 2 (Input only) - Bottom Feed For continuous mounting, consider bottom feed.	9 CONNECTOR/WIRE IN BW Bare Wire (Standard 24") CON6 Connector 6" CON24 Connector 24" 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)	10 CONNECTOR/WIRE OUT CLS Closed End (No feed)	11 WIRE COLOR WH White BK 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") CON6 Connector 6" CON24 Connector 24" 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") CON6 Connector 6" CON24 Connector 24" 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)				
12 WIRE TYPE CL2 Class 2 CL2P Plenum Rated CL2P only available with bare wire leads (BW)	13 MOUNTING SST Stainless Steel M4 Low Profile Magnet MG Magnet	14 FINISH ST Satin BK Black CU Custom	15 LENGTH (IN) Fixture length min 12", max 98.43" not including end caps. Tolerance +0 - 1/8". Consult factory for lengths under 12".	16 EXACT/OPTIMAL 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.		



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1 PRODUCT - DIMENSIONS



2 DELIVERED LUMENS

[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.



Clear 78°

TEMPERATURE RATINGS

		DW 1.5 HE W/FT		DW 2.5 HE 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
DRY	Ambient Operating Temp - Surface	-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	140°F	-4°F	130°F	-4°F	130°F

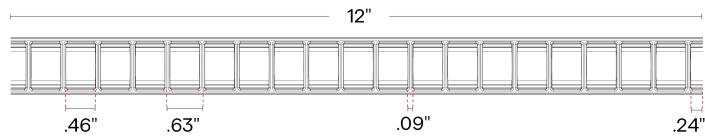


ESSENTIALS LALO-OPTICS (02) TUNABLE APPLICATIONS

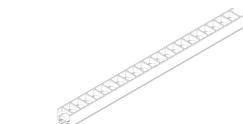
24VDC Linear Fixtures - Surface & Recessed

7 EXTERNAL LOUVER

PLASTIC



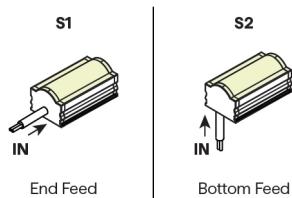
L1-XX



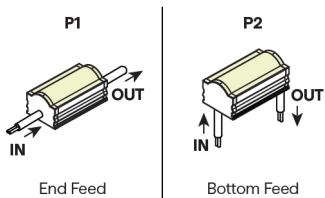
Lumen Multiplier
WH BK
0.72 0.53

8 WIRE INPUT/OUTPUT

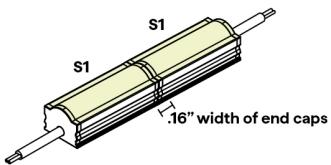
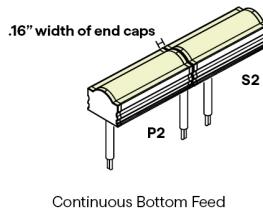
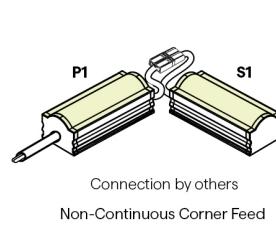
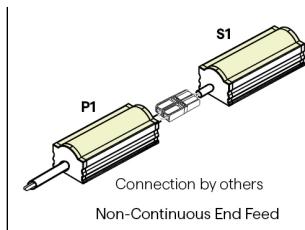
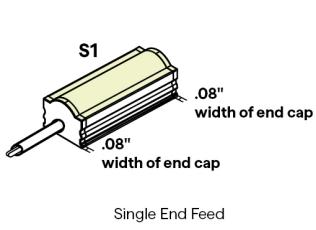
SINGLE (Input only)



PASS THROUGH (Input/Output)



CONFIGURATION OPTIONS



Continuous End to End Feed

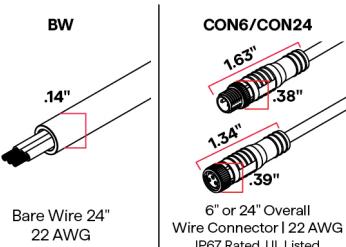


ESSENTIALS LALO-OPTICS (02) TUNABLE APPLICATIONS

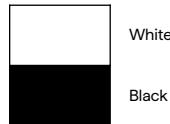
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9 / 10 CONNECTOR/WIRE – IN/OUT

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



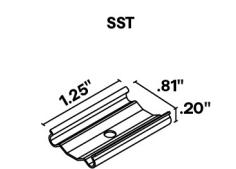
11 WIRE COLOR



White

Black

13 MOUNTING

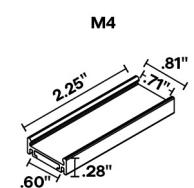


Stainless Steel Clip

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

To order separately use SST-01

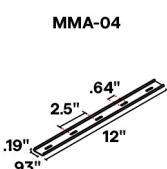
Each clip comes with a #4 x 5/8" Flat Head SS



Low Profile Magnet

One M4 provided per foot.

To order separately use MG-04

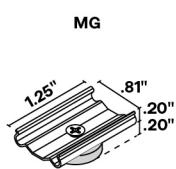


Magnet Mount Accessory for M4

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

14 FINISH



Satin

Black

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



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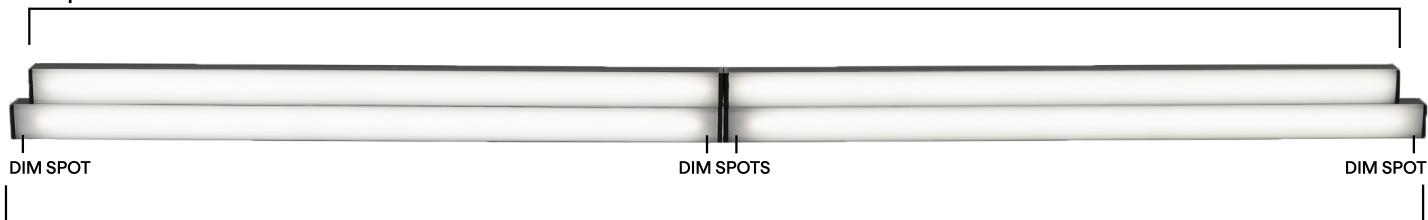
16 EXACT/OPTIMAL FIXTURE LENGTH

[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

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) TUNABLE APPLICATIONS

24VDC Linear Fixtures - Surface & Recessed

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"	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
	DW-HE Tunable Applications	DW-HE Tunable Applications
0.1%	QT-CAB-eLED+TW QT-CAB-eLED+TW-AWN QTM-eLED+TW QTM-eLED+TW-AWN QZ-DMX	Q-SET-QZ-DMX QOM-eLED+TW QZ-DMX
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	Q-SET+QZ-DALI-DT8 QOM-eLED+DALI-DT6 QOM-eLED+DALI-DT8 QOM-eLED+PS-DALI-DT6 QOM-eLED+PS-DALI-DT8
10%	Non-Dim Power Supply with TW App Dongle	

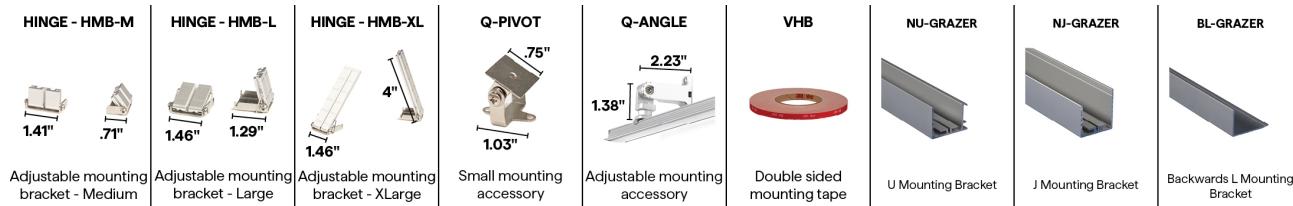


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DIMMING PROTOCOL	INDOOR	OUTDOOR
	DW-HE Tunable Applications	DW-HE Tunable Applications
0-10V	QT-CAB-eLED+TW QT-CAB-eLED+TW-AWN QTM-eLED+TW QTM-eLED+TW-AWN	QOM-eLED+TW
Lutron Athena	QT-CAB-eLED+DALI-DT8-AWN QT-CAB-eLED+TW-AWN QTM-eLED+DALI-DT8-AWN QTM-eLED+TW-AWN	
DMX LED wattage must be doubled for DW-HE products	QZ-DMX	Q-SET-QZ-DMX QZ-DMX
DALI-2: DT6 LED wattage must be doubled for DW-HE products	QT-CAB-eLED+DALI-DT6 QTM-eLED+DALI-DT6	QOM-eLED+DALI-DT6
DALI-2: DT8 LED wattage must be doubled for DW-HE products	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
SCENE App Dimmed	Non-Dim Power Supply with TW App Dongle	

COMPATIBLE MOUNTING ACCESSORIES



COMPATIBLE WIRING ACCESSORIES



COMPATIBLE CONTROL ACCESSORIES

