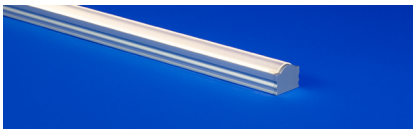
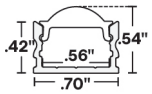
ESSENTIALS LALO-OPTICS (02) TUNABLE APPLICATIONS

24VDC Linear Fixtures - Surface & Recessed

410.2 & 410.16 Closet Rated in 1.5HE





- 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
- 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
				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
LL2DW-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

1.5HE 1.5W/ft HE
2.5HE 2.5W/ft HE
4.0HE 4.0W/ft HE

1.5HE 1.5W/ft HE
2.5HE 2.5W/ft HE

3 CCT

18/30 1800K/3000K
18/35 1800K/3500K
20/27 2000K/2700K
20/30 2000K/3000K
24/40 2400K/4000K
27/40 2700K/4000K
27/55 2700K/5500K

18/30 1800K/3000K
18/35 1800K/3500K
20/27 2000K/2700K
20/30 2000K/3000K
24/40 2400K/4000K
27/40 2700K/4000K
27/55 2700K/5500K

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")
CON6 Connector 6"
CON24 Connector 24"

BW Bare Wire (Standard 24")
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")
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

11 WIRE TYPE

CL2 Class 2
CL2P Plenum Rated

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 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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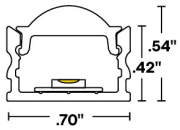
Specification subject to change. Rev-11-11-26

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

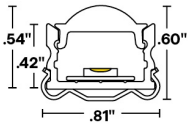
ESSENTIALS LALO-OPTICS (02) TUNABLE APPLICATIONS

24VDC Linear Fixtures - Surface & Recessed

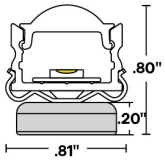
1 PRODUCT - DIMENSIONS



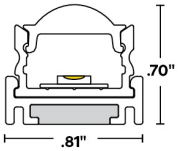
Profile with optical lens



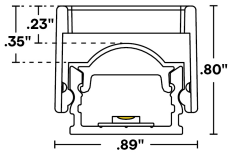
Profile with optical lens and stainless steel mounting clip



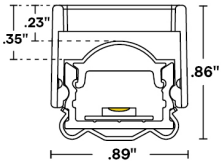
Profile with optical lens magnet mounting clip



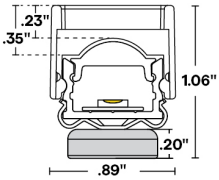
Profile with optical lens and low profile magnet



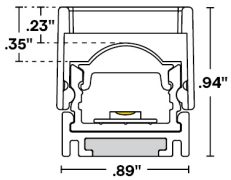
Profile with optical lens and plastic louver



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



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



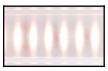
Profile with optical lens, low profile magnet, and plastic louver

2 DELIVERED LUMENS

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

	1.5HE W/FT		2.5HE W/FT		4.0HEW/FT	
	LM/FT	CRI	LM/FT	CRI	LM/FT	CRI
17	153	98	242	98	375	98

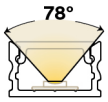
6 DIODE VISIBILITY



Optical lens

PHOTOMETRIC PERFORMANCE

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



78°

TEMPERATURE RATINGS

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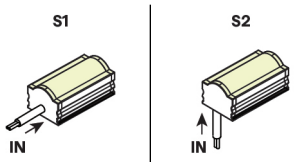
ESSENTIALS LALO-OPTICS (02) TUNABLE APPLICATIONS

24VDC Linear Fixtures - Surface & Recessed

		DW 1.5 HE W/FT		DW 3.0 HE W/FT		DW 2.5 HE W/FT		DW 5.0 HE W/FT		DW 4.0 HE W/FT		DW 8.0 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		QTL power supply other than DALI, DMX		DALI, DMX, or non-QTL power supply	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
DRY	Ambient Operating Temp - Surface	-13°F	145°F	-4°F	135°F	-4°F	135°F	-4°F	120°F	-4°F	125°F	-4°F	105°F
DMP	Ambient Operating Temp - Surface	-13°F	145°F	-4°F	135°F	-4°F	135°F	-4°F	120°F	—	—	—	—
WET	Ambient Operating Temp - Surface	-4°F	140°F	-4°F	130°F	-4°F	130°F	-4°F	115°F	—	—	—	—

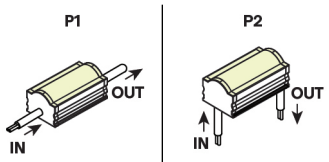
7 WIRE INPUT/OUTPUT

SINGLE (Input only)



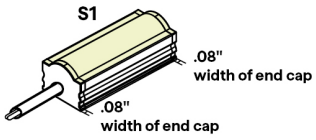
End Feed | Bottom Feed

PASS THROUGH (Input/Output)

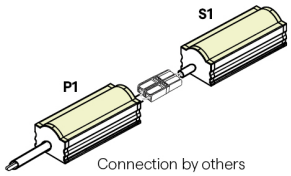


End Feed | Bottom Feed

CONFIGURATION OPTIONS

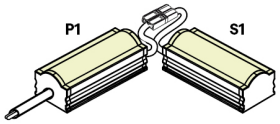


Single End Feed



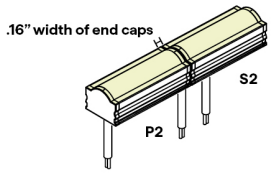
Connection by others

Non-Continuous End Feed

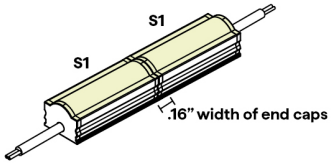


Connection by others

Non-Continuous Corner Feed



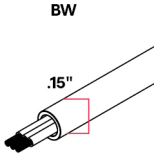
Continuous Bottom Feed



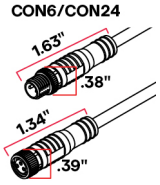
Continuous End to End Feed

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

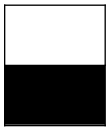


Bare Wire 24"
22 AWG



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

10 WIRE COLOR



White

Black

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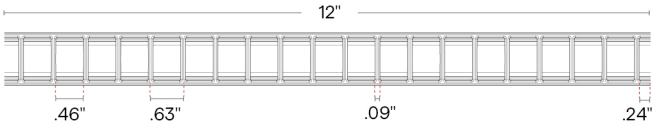
Specification subject to change. Rev-11-11-26

ESSENTIALS LALO-OPTICS (02) TUNABLE APPLICATIONS

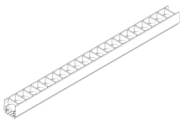
24VDC Linear Fixtures - Surface & Recessed

EXTERNAL LOUVER ACCESSORY

PLASTIC

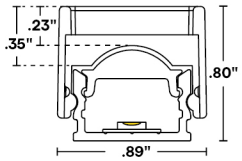


L1-XX



Lumen Multiplier

WH	BK
0.73	0.53

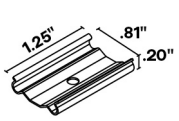


Profile with plastic louver

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

12 MOUNTING

SST



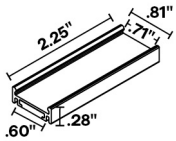
Stainless Steel Clip

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

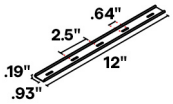


Low Profile Magnet

One M4 provided per foot.

To order separately use MG-04

MMA-04



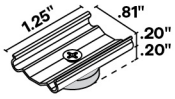
Magnet Mount Accessory for M4

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

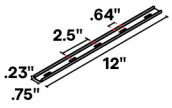


Magnet Clip

One MG provided per foot

To order separately use MG-01

MMA-01



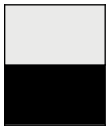
Magnet Mount Accessory of MG-01

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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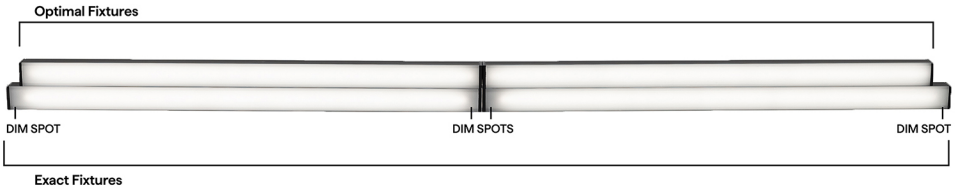
ESSENTIALS LALO-OPTICS (02) TUNABLE APPLICATIONS

24VDC Linear Fixtures - Surface & Recessed

14 EXACT/OPTIMAL FIXTURE LENGTH

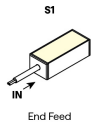
E/O Length Calculator → E/O Explained →

Exact fixtures are the exact length specified +0 -1/8". 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.

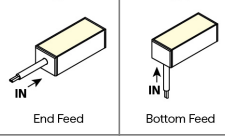
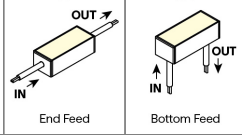


DW-HE DRY DMP LENGTHS BY INCH

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 		P1 & P2 	
	S1	S2	P1	P2
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"	

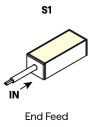
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ESSENTIALS LALO-OPTICS (02) TUNABLE APPLICATIONS

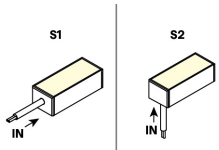
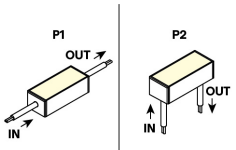
24VDC Linear Fixtures - Surface & Recessed

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 
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 Tunable Applications	DW-HE Tunable Applications
0.1%	QT-CAB-eLED+DALI-DT6 QT-CAB-eLED+DALI-DT8 QT-CAB-eLED+DALI-DT8-AWN QT-CAB-eLED+TW QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT8 QTM-eLED+DALI-DT8-AWN QTM-eLED+TW QZ-DMX	Q-SET-QZ-DMX QOM-eLED+DALI-DT6 QOM-eLED+DALI-DT6-PS QOM-eLED+DALI-DT8 QOM-eLED+DALI-DT8-PS QOM-eLED+TW QZ-DMX
1%	QZ-DALI-DT8	Q-SET+QZ-DALI-DT8 QZ-DALI-DT8
10%	Non-Dim Power Supply with TW App Dongle	

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ESSENTIALS LALO-OPTICS (02) TUNABLE APPLICATIONS

24VDC Linear Fixtures - Surface & Recessed

DIMMING PROTOCOL	INDOOR	OUTDOOR
	DW-HE Tunable Applications	DW-HE Tunable Applications
0-10V	QT-CAB-eLED+TW QTM-eLED+TW	QOM-eLED+TW
Lutron Athena	QT-CAB-eLED+DALI-DT8-AWN QTM-eLED+DALI-DT8-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 except for AWN	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 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 TW App Dongle	

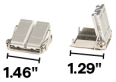
COMPATIBLE MOUNTING ACCESSORIES

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

VHB



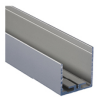
Double sided mounting tape

NU-GRAZER



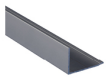
U Mounting Bracket

NJ-GRAZER



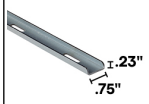
J Mounting Bracket

BL-GRAZER



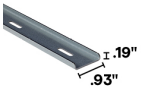
Backwards L Mounting Bracket

MMA-01



Magnet Mount Accessory of MG-01

MMA-04



Magnet Mount Accessory of MG-04

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