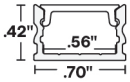
ESSENTIALS LALO-FLAT (01)
WARM DIM APPLICATIONS

24VDC Linear Fixtures - Surface & Recessed

410.2 & 410.16 Closet Rated in 1.5HE

DW-HE ONLY





- Shallow, low-profile fixture for surface or recessed installations
- Choose from diffused, polar, or frosted 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

INFORMATION REQUIRED FOR LIGHTING SCHEDULE

1	2	3	4	5	6
PRODUCT	WATTS/ FT	CCT	RATED	EFFICIENCY	LENS
				STD	

ADDITIONAL INFORMATION REQUIRED TO ORDER

7	8	9	10	11	12	13	14	15
WIRE INPUT/ OUTPUT	CONNECTOR/ WIRE IN	CONNECTOR/ WIRE OUT	WIRE COLOR	WIRE TYPE	MOUNTING	FINISH	LENGTH (IN)	EXACT/ OPTIMAL

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

1 PRODUCT

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.

LL1WD

LED engine is built with 2 wires suitable for phase dimming control. 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

6.0	6.0W/ft

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

19/27	1900K/2700K
19/30	1900K/3000K

4 RATED

DRY	IP20

DMP	IP54
WET	IP67

Can be suitable for exterior use, contact factory for more information

DRY	IP20
DMP	IP54
WET	IP67

Can be suitable for exterior use, contact factory for more information

5 EFFICIENCY

STD	Standard

6 LENS

DF	Diffused
PR	Polar
FR	Frosted

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

SINGLE (Input only)

S1	End Feed
S2	Bottom Feed

PASS THROUGH (Input/output)

P1	End Feed
P2	Bottom Feed

For continuous mounting, consider 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"

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)

9 CONNECTOR/WIRE OUT

CLS	Closed End (No feed)

BW	Bare Wire (Standard 24")
BRL	Barrel
CON6	Connector 6"
CON24	Connector 24"

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)

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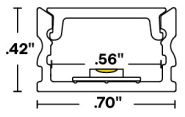
Specification subject to change. Rev-11-11-26

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

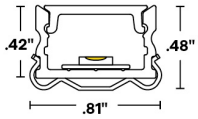
ESSENTIALS LALO-FLAT (01) WARM DIM APPLICATIONS

24VDC Linear Fixtures - Surface & Recessed

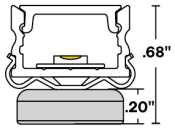
1 PRODUCT - DIMENSIONS



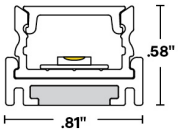
Profile with flat lens



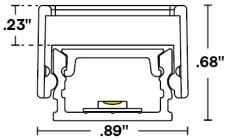
Profile with flat lens and stainless steel mounting clip



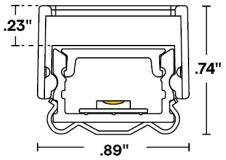
Profile with flat lens and magnet mounting clip



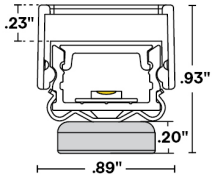
Profile with flat lens and low profile magnet



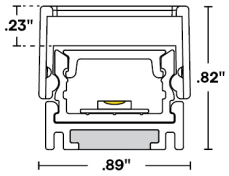
Profile with flat lens and plastic louver



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



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



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

2 DELIVERED LUMENS

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

	1.5HE W/FT		2.5HE W/FT		4.0HEW/FT	
	LM/FT	CRI	LM/FT	CRI	LM/FT	CRI
FR	140	98	221	98	343	98
PR	126	98	199	98	309	98
DF	113	98	179	98	277	98

[Calculated L70 = 70000 hrs]
Tested with LL1WD-6.0-30-DRY-STD

	3000K	
	LM/FT	CRI
FR	441	97
PR	412	97
DF	362	97

6 DIODE VISIBILITY



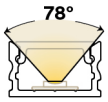
DF - Diffused lens

PR - Polar lens

FR - Frosted lens

PHOTOMETRIC PERFORMANCE

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



78°

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

ESSENTIALS LALO-FLAT (01) WARM DIM APPLICATIONS

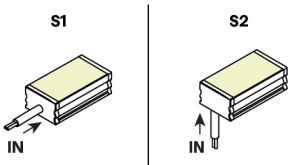
24VDC Linear Fixtures - Surface & Recessed

TEMPERATURE RATINGS

		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		WD 6.0 W/FT	
		Min	Max	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	-4°F	115°F
DMP	Ambient Operating Temp - Surface	-13°F	145°F	-4°F	135°F	-4°F	135°F	-4°F	120°F	—	—	—	—	-4°F	115°F
WET	Ambient Operating Temp - Surface	-4°F	140°F	-4°F	130°F	-4°F	130°F	-4°F	115°F	—	—	—	—	-4°F	110°F

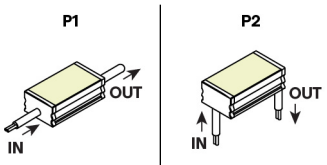
7 WIRE INPUT/OUTPUT

SINGLE (Input only)



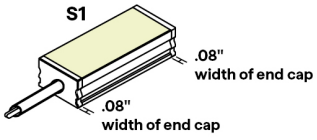
End Feed | Bottom Feed

PASS THROUGH (Input/Output)

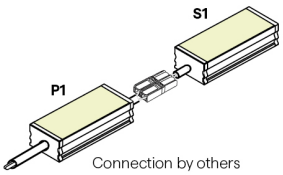


End Feed | Bottom Feed

CONFIGURATION OPTIONS

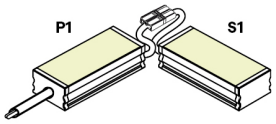


Single End Feed



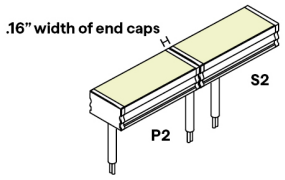
Connection by others

Non-Continuous End Feed

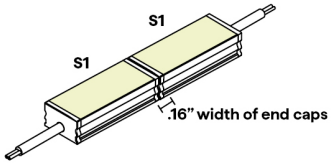


Connection by others

Non-Continuous Corner Feed



Continuous Bottom Feed

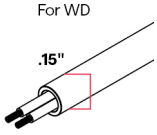


Continuous End to End Feed

8/9 CONNECTOR/WIRE – IN/OUT

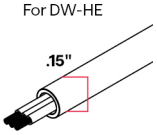
Connector/Wire In or Out not needed to specify product. Standard configuration is BW for Wire In and CLS for Wire out

BW
For WD



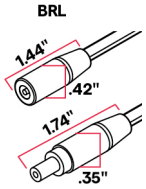
Bare Wire 24"
22 AWG

BW
For DW-HE



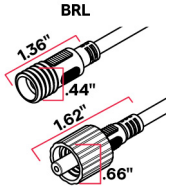
Bare Wire 24"
22 AWG

BRL



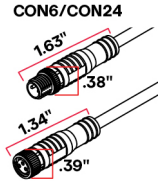
Barrel 6" - DRY/DMP | 22 AWG

BRL



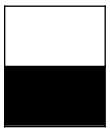
Barrel 6"- WET | 22 AWG

CON6/CON24



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

10 WIRE COLOR



White

Black

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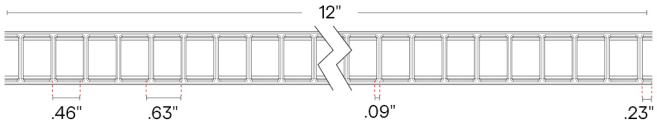
Specification subject to change. Rev-11-11-26

ESSENTIALS LALO-FLAT (01) WARM DIM APPLICATIONS

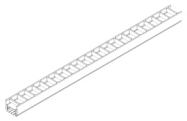
24VDC Linear Fixtures - Surface & Recessed

EXTERNAL LOUVER ACCESSORY

PLASTIC

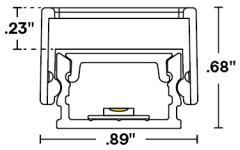


L1-XX



Lumen Multiplier

WH	BK
0.72	0.51

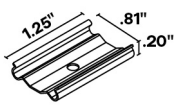


Profile with plastic louver

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

12 MOUNTING

SST



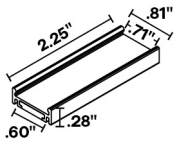
Stainless Steel Clip

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

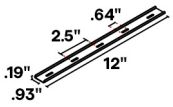


Low Profile Magnet

One M4 provided per foot.

To order separately use MG-04

MMA-04



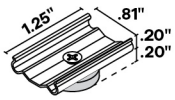
Magnet Mount Accessory for M4

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

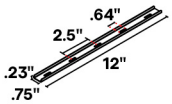


Magnet Clip

One MG provided per foot

To order separately use MG-01

MMA-01



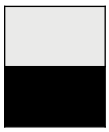
Magnet Mount Accessory of MG-01

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

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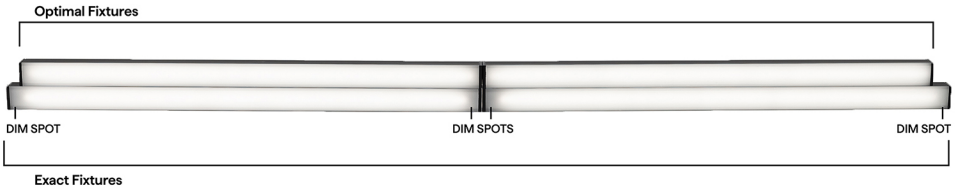
ESSENTIALS LALO-FLAT (01) WARM DIM APPLICATIONS

24VDC Linear Fixtures - Surface & Recessed

14 EXACT/OPTIMAL FIXTURE LENGTH

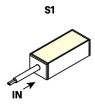
E/O Length Calculator → E/O Explained →

Exact fixtures are the exact length specified +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.

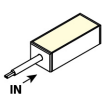
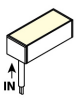
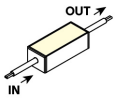
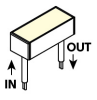


DW-HE DRY DMP LENGTHS BY INCH

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	
				
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"	

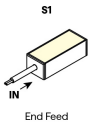
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ESSENTIALS LALO-FLAT (01) WARM DIM APPLICATIONS

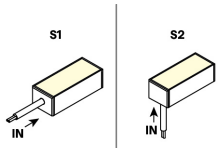
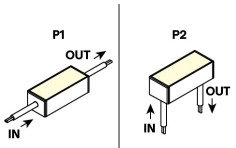
24VDC Linear Fixtures - Surface & Recessed

DW-HE WET LENGTHS BY INCH

EXACT LENGTH

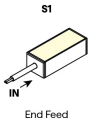
Requested Length	Potential dim spot on either end of a S1 fixture 
12"	1"
13"	0.5"
14"	1"
15"	0.5"
16"	1"
17"	0.5"
18"	1"
19"	0.5"
20"	1"
21"	0.5"
22"	1"
23"	0.5"
24"	1"
36"	1"
48"	1"
60"	1"
72"	1"
84"	1"
96"	1"

OPTIMAL LENGTH

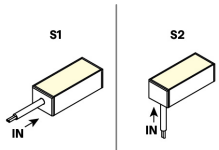
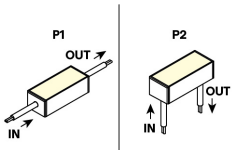
Requested Nominal Length	S1 & S2 	P1 & P2 
12"	10.66"	11.06"
13"	12.66"	11.06"
14"	12.66"	13.06"
15"	14.66"	13.06"
16"	14.66"	15.06"
17"	16.66"	15.06"
18"	16.66"	17.06"
19"	18.66"	17.06"
20"	18.66"	19.06"
21"	20.66"	19.06"
22"	20.66"	21.06"
23"	22.66"	21.06"
24"	22.66"	23.06"
36"	34.66"	35.06"
48"	46.66"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

WD 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 
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"

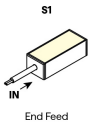
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ESSENTIALS LALO-FLAT (01) WARM DIM APPLICATIONS

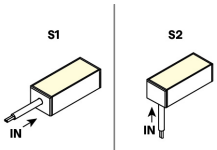
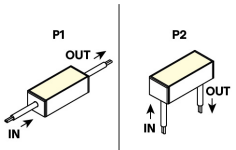
24VDC Linear Fixtures - Surface & Recessed

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 		P1 & P2 	
	End Feed	Bottom Feed	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"	

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-PRO-PH/0-10V QZ-STICK-PH/0-10V QZLP	Q-SET-QZ-DW QOM-eLED+DALI-DT6 QOM-eLED+DALI-DT6-PS QOM-eLED+DALI-DT8 QOM-eLED+DALI-DT8-PS 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+DALI-DT6-PS QZ-DMX QZ-PRO-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		

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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-PRO-PH/0-10V QZ-STICK-PH/0-10V QZLP	Q-SET-QZ-DW QZ-DW	Q-SET-QZ-PH/0-10V QZ-PRO-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-PRO-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-PRO-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		

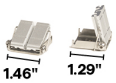
COMPATIBLE MOUNTING ACCESSORIES

HINGE - HMB-M



Adjustable mounting bracket - Medium

HINGE - HMB-L



Adjustable mounting bracket - Large

HINGE - HMB-XL



Adjustable mounting bracket - XLarge

Q-PIVOT



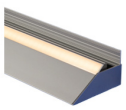
Small mounting accessory

Q-ANGLE



Adjustable mounting accessory

QUOVA-STANDARD



QUOVA Knife Edge

VHB



Double sided mounting tape

NJ-MEDIUM



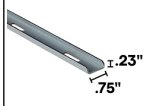
J Mounting Bracket

SD-L-MEDIUM



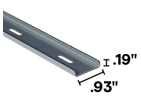
L Mounting Bracket

MMA-01



Magnet Mount Accessory of MG-01

MMA-04



Magnet Mount Accessory of MG-04

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