

Features

The High Efficacy LLHE48 series is a small form factor high performance constant voltage LED strip. Designed to deliver best in class efficacy while operating at low temperature, LLHE48 deliver constant light output, outstanding color consistency and dimming performance without the need of an additional heat sink.



Mounting

LED strip is equipped with 3M™ adhesive transfer tape (9472LE).

Applications

Indoor only - millwork, cove, architectural reveals, undercabinet, display case, handrail, accent lighting.

Approvals

Class 2 damp listed

Operating voltage

24 VDC

Average Life (L90)

100,000 hours

Warranty

7 years



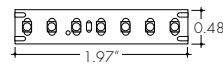
Technical information

TYPE	LLHE48				
	LO-1W	LO	SO	MO	HO
OUTPUT OPTIONS					
Lumens Output (3000K)	128 lm/ft	265 lm/ft	367 lm/ft	490 lm/ft	786 lm/ft
Average Power Consumption (for a 4" section)	1.0 W/ft	1.9 W/ft	2.8 W/ft	3.5 W/ft	6.5 W/ft
Efficacy	128 lm/W	139 lm/W	131 lm/W	140 lm/W	121 lm/W
Cutting Increment (in)	1.97"				
Pitch Length	0.25"				
Max Run Length (in series)	60 ft	48 ft	42 ft	33 ft	21 ft
Reel Length	49.2 ft	49.2 ft	49.2 ft	32.8 ft	32.8 ft
Dimensions	0.48"W x 0.06" H				

CCT	Multiplier (reference - 3000K)	CRI	TM-30		
			R _f	R _g	R _o
2700K	0.94	92	90	99	58
3000K	1.00	92	89	99	57
3500K	1.02	92	89	99	60

NC

No connector



Ordering code

MODEL	OUTPUT	CCT	REEL
LLHE48-LineLED HE48	LO-1W-Low 1 Watt LO-Low SO-Standard MO-Medium HO-High	27K-2700K 30K-3000K 35K-3500K	R-Reel

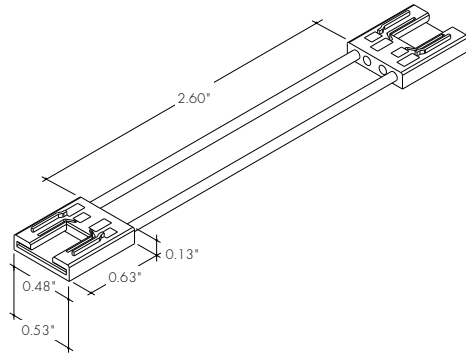
Minii Connectors

Minii connectors are easy, field-installable accessories that make joining LL strip simple! Their minimal width allows them to fit into extrusions, while their transparent frame eliminates dark spots.

Note: verify internal extrusion dimensions to confirm compatibility

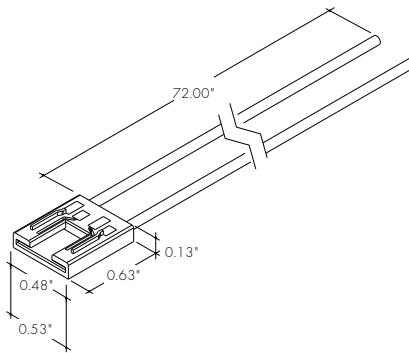
LL-PJC-12-03

Jumper minii connector with 3" wire for LLHE LED strip



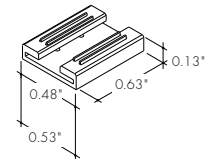
LL-PFC-12-72

Power feed minii connector with 72" wire for LLHE LED strip

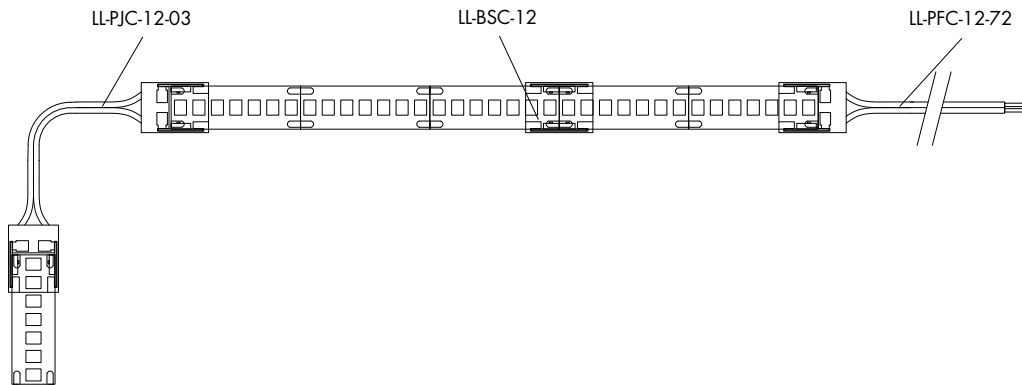


LL-BSC-12

Butt splice minii connector for LED strip



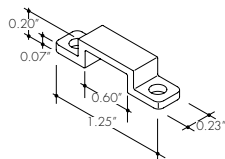
Sample Layout



Accessories

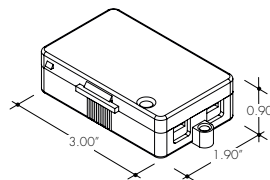
CL2

Silicon mounting Clip



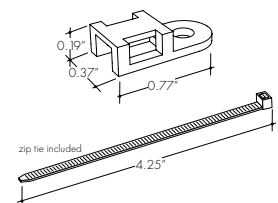
LVSP-4T-BK

Low Voltage, 4 Terminal Splice Box, Black



LL.ZIP

Cable/Wire Strain Relief Clip



recommended at every 12" when LineLED strip is facing down.

Lens Options / Light Transmission



Clear



Half (50%)
Frosted



Graze



Frosted



Flat
Frosted



Raised



Square
Frosted



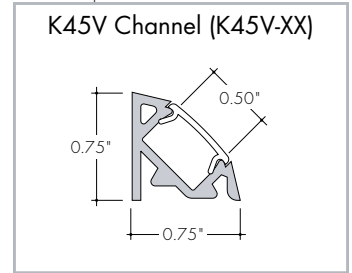
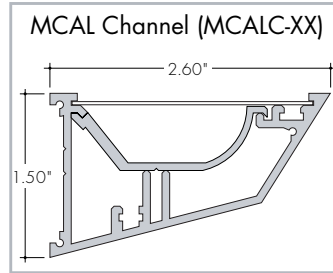
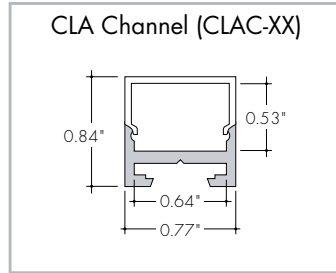
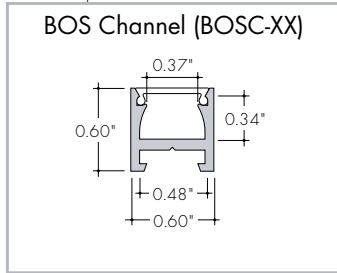
Round Square
Frosted



13°
Semi-Frosted

*Not compatible with Minii connectors

*Not compatible with Minii connectors

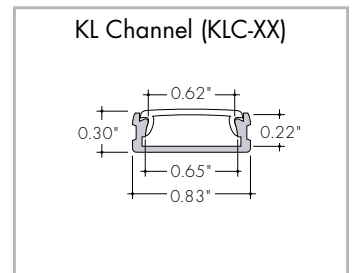
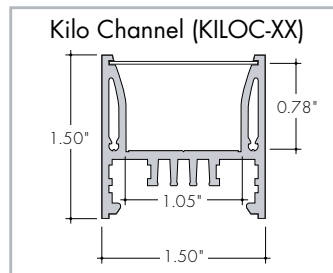
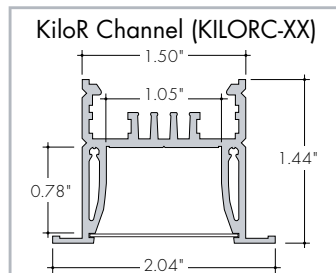
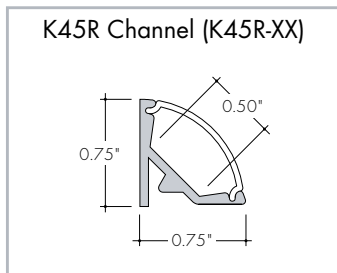


F **SI** **R** **G**
52% 66% 60% 76%

S **Q**
62% 65%

C
94%

C **HF** **F** **13°**
82% 68% 45% 75%

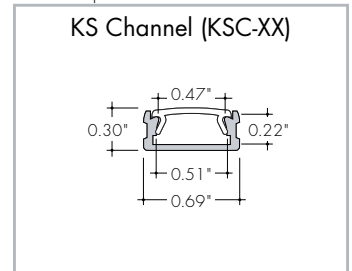
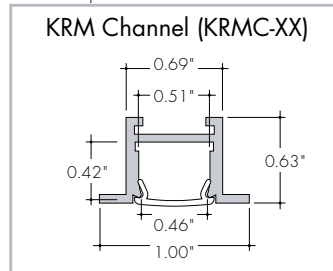
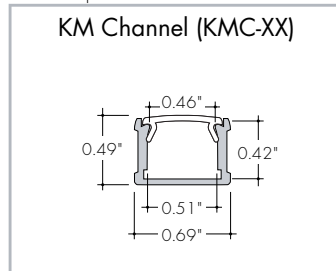
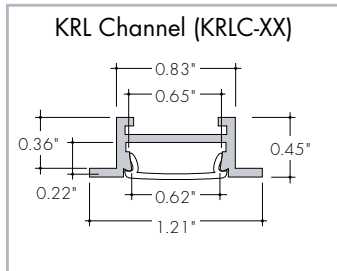


RF
61%

C **F**
85% 75%

C **F**
85% 75%

C **HF** **F**
81% 67% 51%



C **HF** **F**
81% 67% 51%

C **HF** **F** **FF** **R** **GR**
82% 68% 45% 52% 58% 56%

C **HF** **F** **FF** **GR**
82% 68% 45% 52% 56%

C **HF** **F** **FF** **R** **M**
86% 71% 56% 60% 85% 64%

*Not compatible with Minii connectors

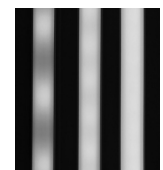
*Not compatible with Minii connectors

*Not compatible with LLHE64-XHO
*Not compatible with Minii connectors

Led Dotting per Extrusion

using the frosted lens option

Extrusion	LED Model LLHE48
KSC, KRSC	CD
KMC, KRMC, K45V	ND
KXLC, KRXLC	ND
K45V	CD
K45R	ND
KLC, KRLC	CD
KILOC, KILORC	ND
RO	ND
RO15	ND
BOSC	ND
CLAC	ND
MCAL	ND



CD SD ND
CD - Clear Dotting
SD - Slight Dotting
ND - No Dotting

Installation

All mounting channels are field cuttable using miter saw with circular blade suitable for cutting aluminum.

Ordering

Extrusions are sold separately. View respective specsheets for details on ordering extrusions and their accessories (endcaps, mounting brackets, etc).

Lens Options / Light Transmission

C
Clear

HF
Half (50%)
Frosted

GR
Graze

F
Frosted

FF
Flat
Frosted

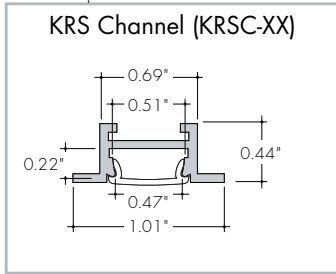
R
Raised

S
Square
Frosted

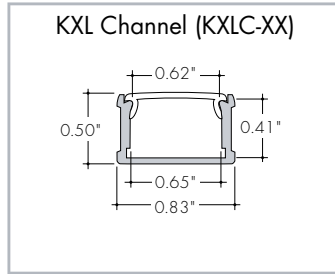
Q
Round Square
Frosted

13°
13°
Semi-Frosted

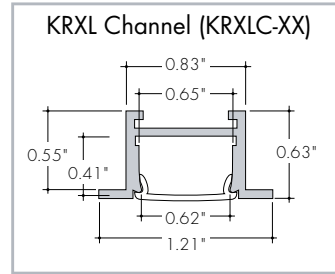
*Not compatible with Minii connectors



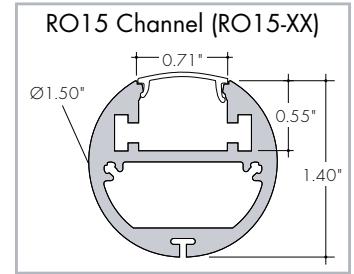
C 86%
HF 71%
F 56%
FF 60%
M 64%



C 79%
HF 66%
F 49%

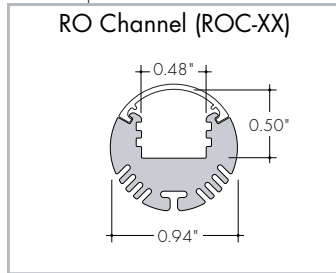


C 79%
HF 66%
F 49%



C 65%
F 41%

*Not compatible with Minii connectors



C 79%
F 50%

Installation

All mounting channels are field cuttable using miter saw with circular blade suitable for cutting aluminum.

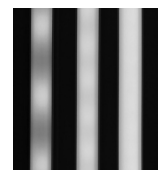
Ordering

Extrusions are sold separately. View respective specsheets for details on ordering extrusions and their accessories (endcaps, mounting brackets, etc).

Led Dotting per Extrusion

using the frosted lens option

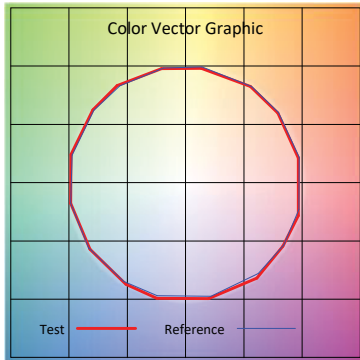
Extrusion	LED Model LLHE48
KSC, KRSC	CD
KMC, KRMC, K45V	ND
KXLC, KRXLC	ND
K45V	CD
K45R	ND
KLC, KRLC	CD
KILOC, KILORC	ND
RO	ND
RO15	ND
BOSC	ND
CLAC	ND
MCAL	ND



CD SD ND
CD - Clear Dotting
SD - Slight Dotting
ND - No Dotting

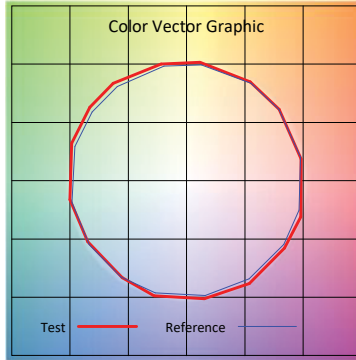
TM-30 Color Vector Graphics

2700K



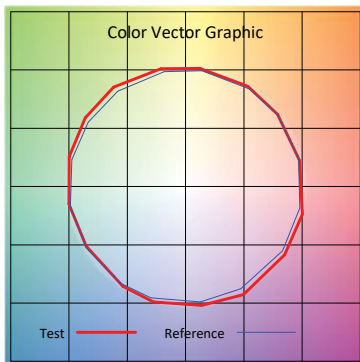
Hue Bin	Rf	Graphic Shifts (%)	
		Chroma	Hue
1	97.1	-1.0%	-0.6%
2	98.2	-0.7%	-0.2%
3	97.0	-0.5%	0.8%
4	97.1	-1.2%	0.2%
5	96.9	-0.1%	1.9%
6	96.2	1.7%	1.8%
7	97.3	0.8%	-0.1%
8	97.9	1.0%	-0.3%
9	98.2	-0.1%	-0.1%
10	96.8	-0.2%	1.5%
11	94.8	0.9%	3.0%
12	94.4	2.4%	0.2%
13	95.7	1.6%	-2.4%
14	94.2	2.7%	-3.1%
15	96.5	-0.0%	-1.4%
16	92.3	0.7%	-5.3%

3000K



Hue Bin	Rf	Graphic Shifts (%)	
		Chroma	Hue
1	95.9	0.2%	-1.7%
2	97.4	0.2%	-0.2%
3	96.3	0.7%	1.2%
4	95.1	1.9%	1.6%
5	94.9	2.3%	2.1%
6	92.6	4.3%	1.2%
7	92.1	3.9%	-2.2%
8	93.1	3.3%	-2.3%
9	94.8	1.2%	-2.8%
10	94.6	-0.5%	-2.7%
11	96.2	-0.1%	1.0%
12	93.7	2.7%	-0.3%
13	95.7	2.5%	-1.3%
14	94.2	3.6%	-2.1%
15	94.2	2.2%	-2.5%
16	92.0	2.5%	-5.3%

3500K



Hue Bin	Rf	Graphic Shifts (%)	
		Chroma	Hue
1	96.4	0.5%	-1.5%
2	97.7	0.3%	0.2%
3	94.7	1.0%	2.2%
4	94.4	1.7%	2.2%
5	93.4	3.0%	2.3%
6	91.4	5.0%	1.0%
7	92.7	4.1%	-1.6%
8	94.1	2.8%	-2.1%
9	95.0	0.9%	-2.1%
10	95.9	-0.8%	-1.6%
11	93.5	1.1%	3.4%
12	91.7	3.1%	3.0%
13	95.3	3.1%	0.5%
14	93.0	5.3%	-0.8%
15	93.5	3.4%	-2.1%
16	90.9	3.2%	-4.6%

Power Consumption

Tested at full power with PDC Series power supplies.

Nominal Length	LLHE48-LO-1W		HE48LO		HE48SO		HE48MO		HE48HO	
	W/ft	Total Wattage	W/ft	Total Wattage	W/ft	Total Wattage	W/ft	Total Wattage	W/ft	Total Wattage
1	0.90	0.90	1.7	1.7	2.5	2.5	3.5	3.5	5.7	5.7
2	0.95	1.90	1.9	3.7	2.7	5.4	3.5	7.0	7.3	14.7
3	0.97	2.90	2.0	5.7	2.8	8.2	3.5	10.2	7.1	20.6
4	0.98	3.90	1.8	7.1	2.8	11.2	3.5	13.9	6.5	25.4
5	0.98	4.90	1.8	9.0	3.0	14.6	3.6	17.6	6.4	31.6
6	0.98	5.90	1.9	11.3	2.9	17.9	3.5	21.4	6.4	38.7
7	0.99	6.90	1.8	13.1	2.9	20.8	3.5	25.1	6.2	44.1
8	0.99	7.90	1.8	14.7	2.9	23.3	3.6	28.5	6.2	49.4
9	1.02	9.20	1.8	16.4	2.9	25.9	3.5	31.9	6.1	55.2
10	1.02	10.20	1.8	18.1	2.9	28.6	3.5	35.5	6.1	60.5
11	1.02	11.21	1.7	19.1	2.8	31.2	3.5	38.9	6.4	70.2
12	1.02	12.22	1.7	20.4	2.9	34.4	3.5	42.3	6.1	73.4
13	1.02	13.23	1.7	22.1	2.8	36.8	3.5	45.7	5.9	76.9
14	1.02	14.24	1.6	22.8	2.8	39.3	3.5	48.8	5.7	79.4
15	1.02	15.25	1.6	23.5	2.8	41.9	3.5	52.1	5.5	82.0
16	1.02	16.26	1.6	25.6	2.8	45.3	3.5	56.5	5.2	84.3
17	1.02	17.27	1.7	28.5	2.8	48.1	3.5	59.4	5.0	86.2
18	1.02	18.28	1.7	30.4	2.8	51.0	3.5	62.8	4.9	88.1
19	1.02	19.29	1.8	33.6	2.8	53.3	3.5	65.8	4.7	90.2
20	1.02	20.30	1.8	35.8	2.8	56.0	3.5	69.0	4.6	91.5
21	1.01	21.31	1.8	37.7	2.8	59.4	3.4	71.4	4.4	93.1
22	1.01	22.32	1.8	39.5	2.8	61.3	3.3	73.5		
23	1.01	23.33	1.8	41.4	2.8	64.4	3.3	75.4		
24	1.01	24.34	1.8	43.1	2.8	66.0	3.2	77.2		
25	1.01	25.35	1.9	46.2	2.7	68.1	3.2	78.8		
26	1.01	26.36	1.9	48.2	2.7	70.7	3.1	79.8		
27	1.01	27.37	1.9	50.4	2.7	72.0	3.0	81.4		
28	1.01	28.38	1.9	52.2	2.6	73.6	3.0	82.9		
29	1.01	29.39	1.9	53.9	2.6	74.7	2.9	84.2		
30	1.01	30.40	1.9	57.7	2.5	76.1	2.9	86.1		
31	1.01	31.38	1.9	59.6	2.5	77.0	2.8	87.6		
32	1.01	32.36	1.9	61.4	2.4	77.7	2.8	89.2		
33	1.01	33.34	1.9	63.3	2.4	78.9	2.7	90.7		
34	1.01	34.32	1.9	65.0	2.3	78.0				
35	1.01	35.30	1.9	65.4	2.2	78.1				
36	1.01	36.28	1.9	67.1	2.2	79.5				
37	1.01	37.26	1.9	69.3	2.2	80.4				
38	1.01	38.24	1.9	71.1	2.1	80.9				
39	1.01	39.22	1.9	73.0	2.1	81.0				
40	1.01	40.20	1.9	74.7	2.0	81.2				
41	1.00	41.00	1.9	76.0	2.0	82.6				
42	1.01	42.00	1.8	77.3	2.0	83.0				
43	1.00	42.90	1.8	78.6						
44	1.00	43.80	1.8	79.9						
45	1.00	44.70	1.8	81.1						
46	1.00	45.60	1.8	81.8						
47	1.00	46.50	1.8	82.5						
48	1.00	47.40	1.7	83.1						
49	1.00	48.20								
50	0.99	49.60								
51-60	0.99	59.40								

Voltage Drop Calculator

The below chart assumes nominal voltage of 24 Volts and a Voltage Drop Allowance of 3% through the wire

Wattage [W]	Maximum Wire Length From Power Supply to Start of Run [ft]						
	12 AWG	14 AWG	16 AWG	18 AWG	20 AWG	22 AWG	24 AWG
5	1088.2	684.4	430.3	270.6	170.2	107.1	67.3
10	544.1	342.2	215.1	135.3	85.1	53.5	33.7
15	362.7	228.1	143.4	90.2	56.7	35.7	22.4
20	272.0	171.1	107.6	67.7	42.6	26.8	16.8
25	217.6	136.9	86.1	54.1	34.0	21.4	13.5
30	181.4	114.1	71.7	45.1	28.4	17.8	11.2
35	155.5	97.8	61.5	38.7	24.3	15.3	9.6
40	136.0	85.5	53.8	33.8	21.3	13.4	8.4
45	120.9	76.0	47.8	30.1	18.9	11.9	7.5
50	108.8	68.4	43.0	27.1	17.0	10.7	6.7
55	98.9	62.2	39.1	24.6	15.5	9.7	6.1
60	90.7	57.0	35.9	22.6	14.2	8.9	5.6
65	83.7	52.6	33.1	20.8	13.1	8.2	5.2
70	77.7	48.9	30.7	19.3	12.2	7.6	4.8
75	72.5	45.6	28.7	18.0	11.3	7.1	4.5
80	68.0	42.8	26.9	16.9	10.6	6.7	4.2
85	64.0	40.3	25.3	15.9	10.0	6.3	4.0
90	60.5	38.0	23.9	15.0	9.5	5.9	3.7
96	56.7	35.6	22.4	14.1	8.9	5.6	3.5

Power Supplies

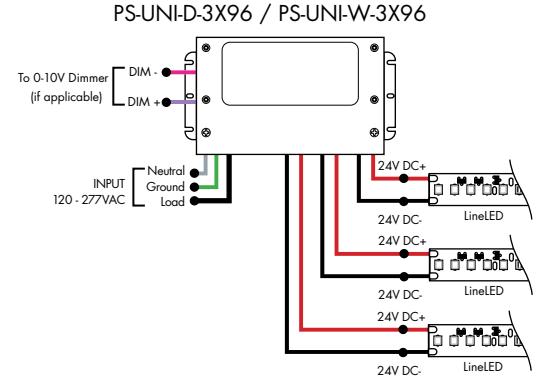
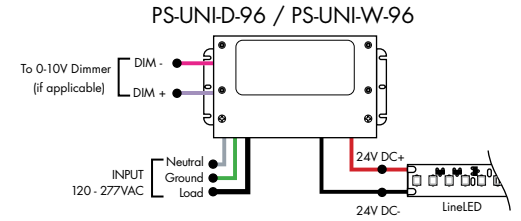
See Power Supply instructions and spec sheet for wiring information. For a complete list of compatible dimmers, see Compatible Dimming Chart on the Resources page.

Ordering Code Universal Dimming Power Supplies 1% 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS-Power Supply, 120-277VAC	UNI-0-10V Dimming, Phase Dimming	D-Dry W-Wet	30-30 Watts 60-60 Watts 96-96 Watts 3x96-3x96 Watts	24-24 VDC

Compatibility: View a complete list of compatible dimmers on product page [\(Link\)](#)

0-10V - 1% dimming
MLV/ELV/TRIAC - 1% dimming, consult dimming compatibility chart



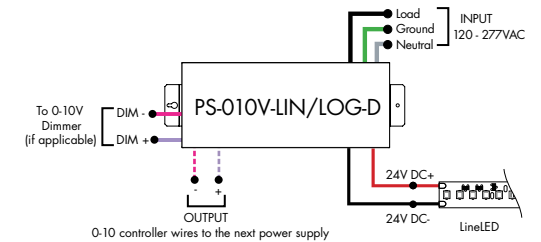
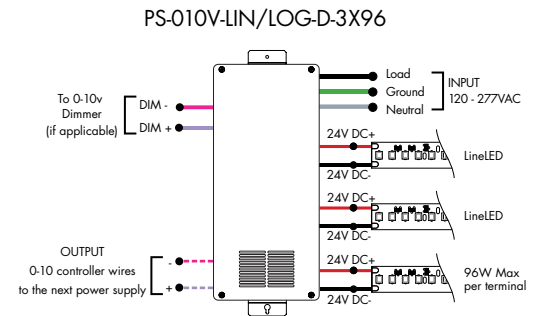
MODELS	PS-UNI-W-30W	PS-UNI-W-60W	PS-UNI-W-96W	PS-UNI-W-3X96W
Length	6.50"	7.40"	8.66"	11.85"
Width	3.73"	3.73"	3.73"	4.32"
Depth	1.61"	1.61"	1.61"	1.81"

MODELS	PS-UNI-D-30W	PS-UNI-D-60W	PS-UNI-D-96W	PS-UNI-D-3X96W
Length	8.77"	8.77"	8.11"	9.94"
Width	4.27"	4.27"	5.60"	7.61"
Depth	1.83"	1.83"	1.83"	2.02"

Ordering Code 0-10V Dimming Power Supplies 0.1% 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS-Power Supply, 120-277VAC	010V-LIN-0-10V Dimming (0.1%), Linear 010V-LOG-0-10V Dimming (0.1%), Logarithmic	D-Dry	96-96 Watts 3X96-3x96 Watts	24-24 VDC

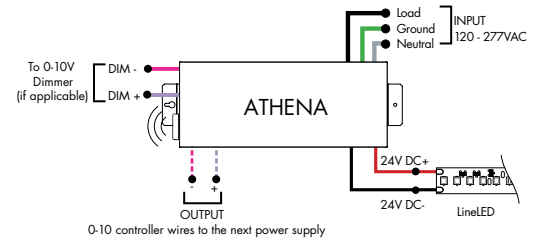
MODELS	96W	3X96
Length	14.40"	15.00"
Width	5.20"	6.62"
Depth	2.60"	4.45"



Athena 0-10V LED Driver

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT	FEATURE
PS-Power Supply, 120-277VAC	010V-LIN-0-10V Dimming, Linear 010V-LOG-0-10V Dimming, Logarithmic	D-Dry	96-96 W	24-24 VDC	AWNR-Athena

MODELS	96W
Length	14.40"
Width	5.20"
Depth	2.60"



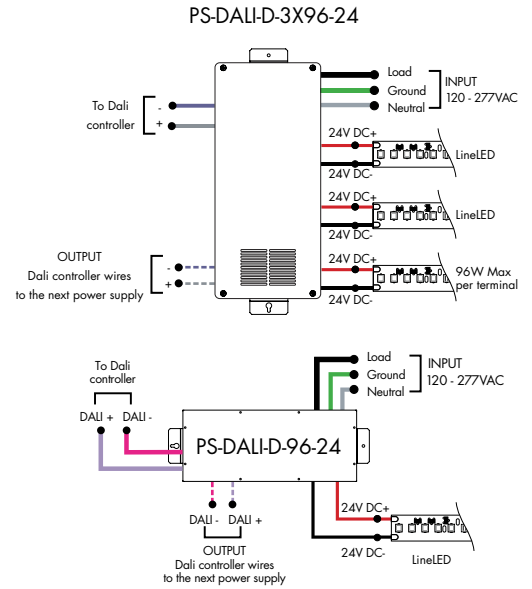
Power Supplies

See Power Supply instructions and spec sheet for wiring information. For a complete list of compatible dimmers, see Compatible Dimming Chart on the Resources page.

Ordering Code DALI1 Dimming Power Supplies 0.1% 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS-Power Supply, 120-277VAC	DALI-DALI (0.1%)	D-Dry	96-96 Watts 3X96-3X96 Watts	24-24 VDC

Model	96W	3X96
Length	14.40"	15.00"
Width	5.20"	6.62"
Depth	2.60"	4.56"

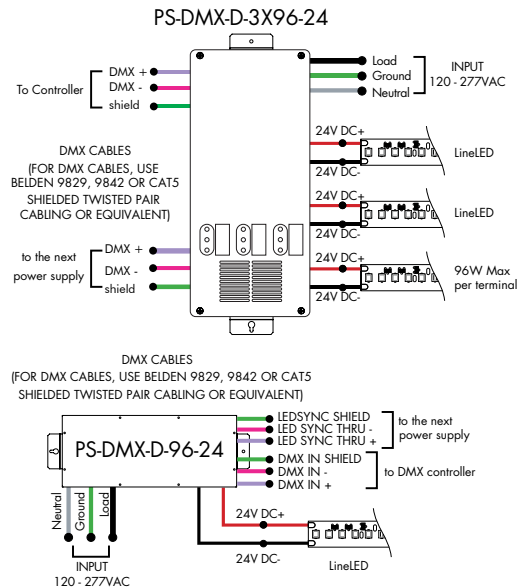


Ordering Code DMX Dimming Power Supplies 0.1% 120VAC - 277VAC Requires Zonal Control

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS-Power Supply, 120-277VAC	DMX-DMX (0.1%)	D-Dry	96-96 Watts 3X96-3X96 Watts	24-24 VDC

*Zonal control power supplies. Control multiple tapes/zones using DMX channels.

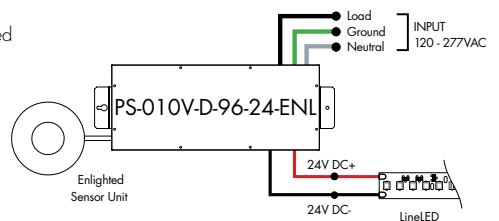
MODELS	96W	3X96
Length	14.40"	15.00"
Width	5.20"	6.62"
Depth	2.60"	4.56"



Ordering Code Enlightened Enabled Dimming Power Supplies 1% 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT	FEATURE
PS-Power Supply, 120-277VAC	010V-0-10V Dimming (1%)	D-Dry	96-96 Watts	24-24 VDC	ENL-0-10V Enlightened

Model	96W
Length	14.40"
Width	5.20"
Depth	2.60"

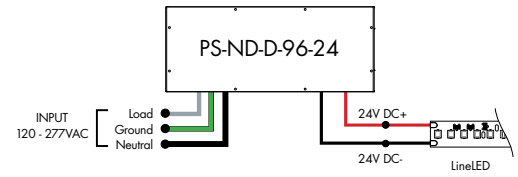


Power Supplies

See Power Supply instructions and spec sheet for wiring information. For a complete list of compatible dimmers, see Compatible Dimming Chart on the Resources page.

Ordering Code Non-Dimming Power Supply 120VAC - 277VAC

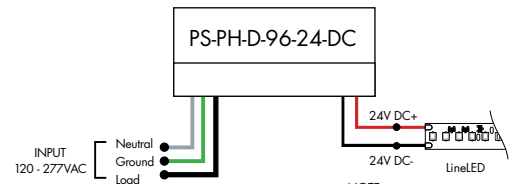
MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS	ND	D	96	24
Power Supply, 120-277VAC	Non Dimming	Dry	96 Watts	24 VDC



MODELS	96W
Length	14.40"
Width	5.20"
Depth	2.60"

Ordering Code Phase Dimming Power Supply 1% 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT	OUTPUT CONTROL
PS	PH	D	96	24	DC
Power Supply, 120-277VAC	Phase Dimming (Triac, ELV, MLV)	Dry	96 Watts	24 VDC	Direct Current



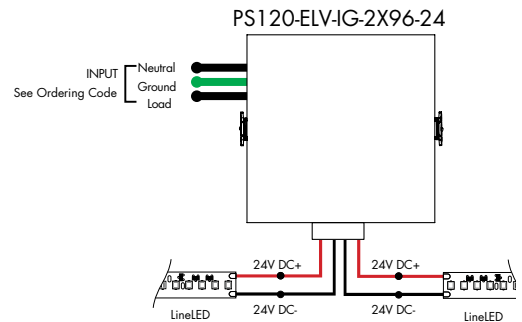
MLV/ELV/TRIAC - 1% dimming, consult dimming compatibility chart ([link](#))

NOTE:
OVER THE WHITE, GREEN, AND BLACK WIRES,
CONNECT TO ELV OR MLV DIMMER

MODELS	96W
Length	8.25"
Width	4.10"
Depth	1.56"

Ordering Code In-Ground Power Supplies

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS120	ELV	IG	2X96	24
Power Supply, 120VAC	ELV Dimming (1%)	In Ground	2X96 Watts	24 VDC
PS240				
Power Supply, 240VAC				
PS277				
Power Supply, 277VAC				



MODELS	2X96W
Length	8.40"
Width	8.30"
Depth	8.10"

Power Supplies

See Power Supply instructions and spec sheet for wiring information. For a complete list of compatible dimmers, see Compatible Dimming Chart on the Resources page.



Luminii is a Lutron OEM Advantage Partner

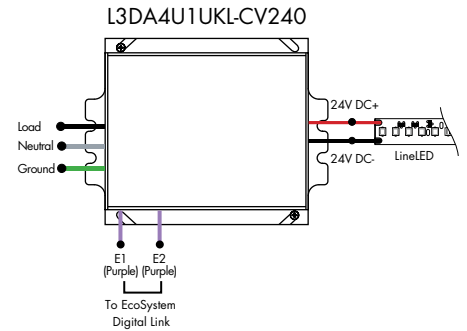
Lutron Power Supplies 1%

MODEL

L3DA4U1UKL-CV240

HiLume™ 1% EcoSystem Voltage LED driver
40W max

MODELS	L3DA4U1UKL-CV240
Length	4.98"
Width	4.00"
Depth	2.62"



Luminii is a Lutron OEM Advantage Partner

Lutron Power Supplies 0.1%

MODEL

L3D0-96W24V-U

HiLume™ 0.1% EcoSystem Voltage LED Driver with Soft-On, Fade-to-Black™
96W max

MODELS	L3D0
Length	10.50"
Width	5.50"
Depth	2.00"

