LLTW51X2

Tunable White

Features

LineLED Tunable White series is a small profile high performance LED strip.This Tunable White LED series offers a wide CCT range to create the perfect ambiance in real time. From bright white encouraging wakefulness, to warm amber sunsetting into relaxation, LineLED TW51X2 can transform any environment to match the natural human circadian rhythm. Industry-best color consistency with single-binned LEDs. This High Color Quality LED strip boasts CRIs and R9 values up to 98. It is easily installed within discrete aluminum extrusions with multiple mounting options.

Mounting
LLED strip is equipped with 3M™ adhesive tape.

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

Approvals
Class 2 damp listed

Operating voltage
24 VDC

Average Life (L70)
50,000 hours

Warranty
7 years

Technical information

TYPE	LLTW51X2	
OUTPUT OPTIONS	**VHO (18K-30K)**	**VHO (27K-65K)**
Lumens Output (all channels full on)	716 lm/ft	922 lm/ft
Average Power Consumption (for a 4' section)	9.5 W/ft	
Efficacy	75 lm/W	97 lm/W
Cutting Increment (in)	1.64"	
Pitch Length	0.23"	
Max Run Length (in series)	12.0 ft	
Dimensions	0.63" W x 0.09" H	
Ambient Operating Temperature Range*	-15°F – 77°F (-25°C – 25°C)	

*VHO output must be paired with an aluminum channel
*Ambient Operating Temperature Range to maintain L70 of 50K+ hours in normal conditions. Exceeding Ambient Operating Temperature Range may result in decreased life/output. Consult Technical Support for specific inquires.

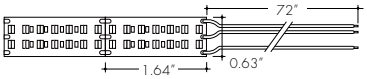
CCT	TM-30			
	CRI	R_f	R_g	R_9
1800K	92	85	91	86
2400K	95	93	106	98
3000K	97	94	104	95
2700K	97	95	103	93
4200K	96	93	105	95
6500K	91	90	101	63

*2400K condition from both 1800K and 3000K channels on at full brightness. 4200K condition from both 2700K and 6500K channels on at full brightness.

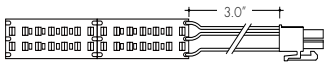
CCT	Multiplier (reference - 27K-65K)
18K-30K	0.78
27K-65K	1.00

Section Start/End Options

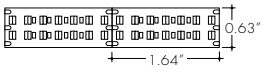
SL
Soldered lead wires (72")



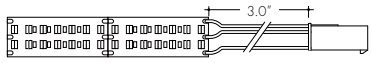
LF
Lead Female 3" cable



NC
No connector



LM
Lead Male 3" cable



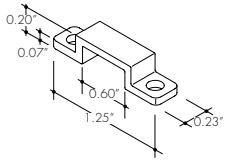
Ordering code

MODEL	OUTPUT	CCT	SECTION START[1]	SECTION END[1]	LENGTH
LLTW51X2-LineLED TW51	VHO-Very High	18K-30K-1800K - 3000K 27K-65K-2700K - 6500K	SL-Soldered lead wires (72") NC-No connector LM-Lead Male LF-Lead Female	SL-Soldered lead wires (72") NC-No connector LM-Lead Male LF-Lead Female	Ordered in one foot increments. See chart above for max run length.

1 - Additional Connectors and Leads available, see below.

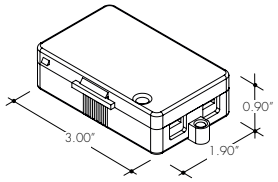
Accessories

CL2
Mounting clip

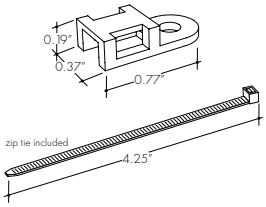


Recommended every 12" when LineLED strip is facing down

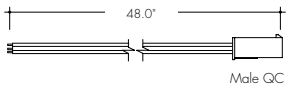
LVSP-4T-BK
Low Voltage, 4 Terminal Splice Box, Black, IP20



LL.ZIP
Cable/Wire Strain Relief Clip

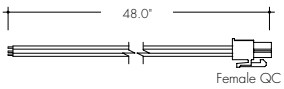


MOLEX-CON-LEAD-M-3-48
Molex Male Connector Cable, 3 pin, 48"



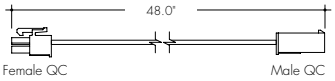
For power supply connection, not intended to be soldered to LED strip

MOLEX-CON-LEAD-F-3-48
Molex Female Connector Cable, 3 pin, 48"



For power supply connection, not intended to be soldered to LED strip

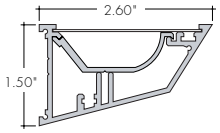
MOLEX-JC-F-M-3-48
Female/Male Jumper Cable, 3 pin, 48"



For connecting LED strips in series

Lens Options / Light Transmission

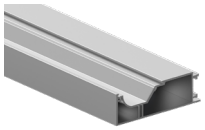
MCAL CHANNEL -MCALC

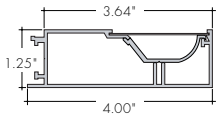


Lens	Long Throw	Tall Throw
Transmission %	91%	91%
Dotting*	CD	CD

*At 100% brightness

MREC CHANNEL -MRECC

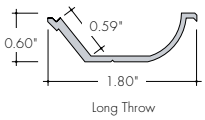




Lens	Long Throw	Tall Throw
Transmission %	91%	91%
Dotting*	CD	CD

*At 100% brightness

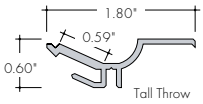
CLT CHANNEL -CLTC



Lens	No Lens
Transmission %	100%
Dotting*	CD

*At 100% brightness

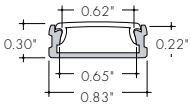
CTT CHANNEL -CTTC



Lens	No Lens
Transmission %	100%
Dotting*	CD

*At 100% brightness

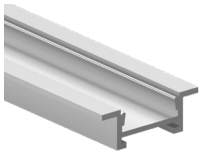
KL CHANNEL -KLC

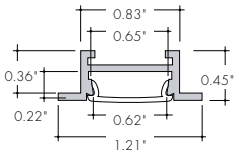


Lens	Clear	Half Frosted	Frosted
Transmission %	90%	75%	60%
Dotting*	CD	CD	SD

*At 100% brightness

KRL CHANNEL -KRLC

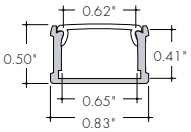




Lens	Clear	Half Frosted	Frosted
Transmission %	90%	75%	60%
Dotting*	CD	CD	SD

*At 100% brightness

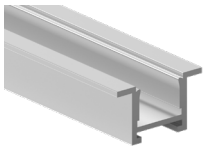
KXL CHANNEL -KXLC

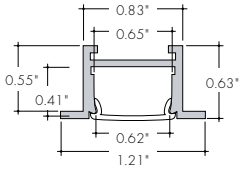


Lens	Clear	Half Frosted	Frosted
Transmission %	86%	69%	54%
Dotting*	CD	CD	ND

*At 100% brightness

KRXL CHANNEL -KRXLC

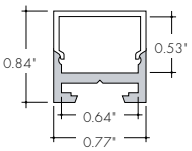




Lens	Clear	Half Frosted	Frosted
Transmission %	86%	69%	54%
Dotting*	CD	CD	ND

*At 100% brightness

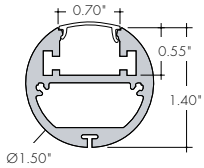
CLA CHANNEL -CLAC



Lens	Rounded Square Frosted	Square Frosted
Transmission %	62%	65%
Dotting*	ND	ND

*At 100% brightness

RO15 CHANNEL -RO15C

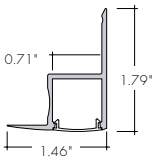


Lens	Clear	Frosted
Transmission %	76%	50%
Dotting*	CD	ND

*At 100% brightness

Lens Options / Light Transmission

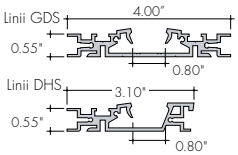
ALE CHANNEL
-ALEC



Lens	Clear	Frosted
Transmission %	58%	37%
Dotting*	CD	ND

*At 100% brightness

LIN CHANNEL
-LINC



Lens	Frosted	Frosted Silicone	No Lens
Transmission %	48%	56%	82%
Dotting*	ND	ND	CD

*At 100% brightness

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 Reference

Use complete Dotting Chart Tool online for more dotting information

Dotting Chart Tool

I'm also click-able

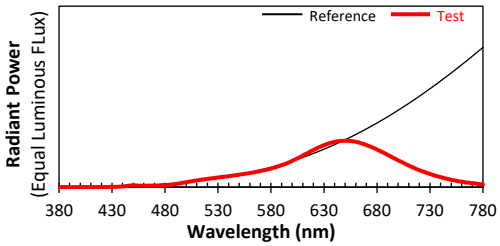
 **CD** - Clear Dotting

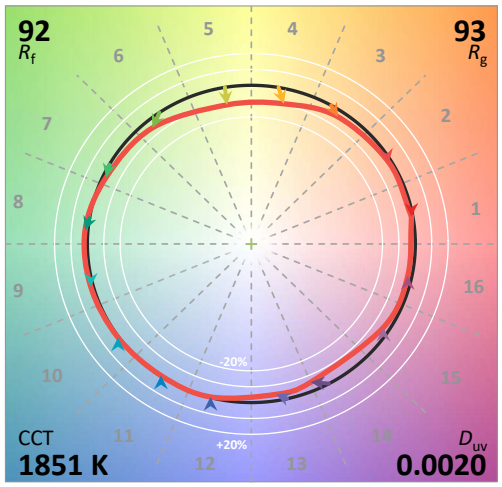
 **SD** - Slight Dotting

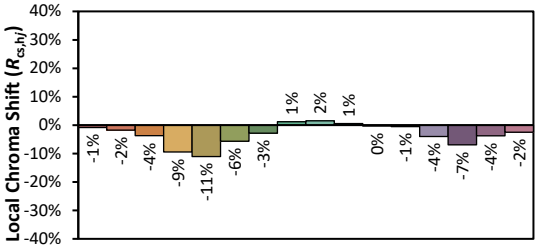
 **ND** - No Dotting

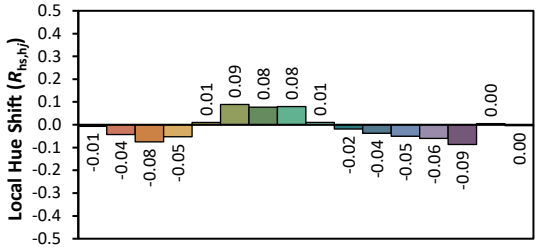
TM-30-18: Data

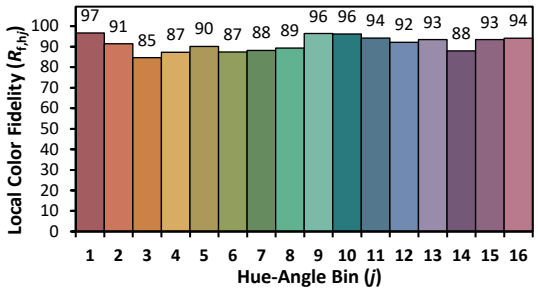
1800K (1 channel on)



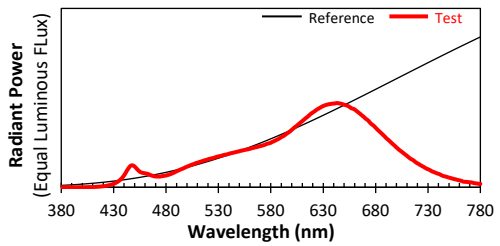


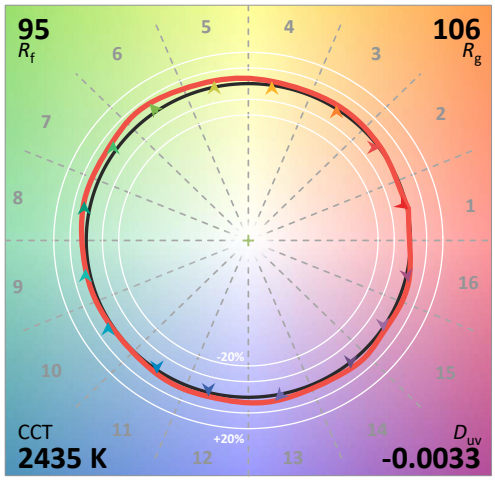


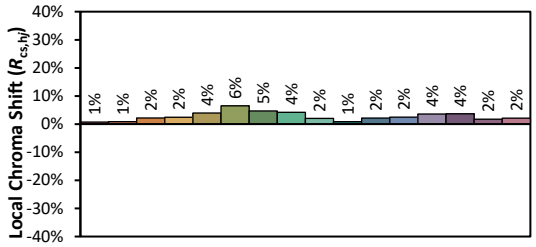


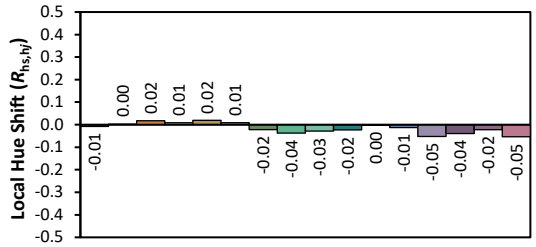


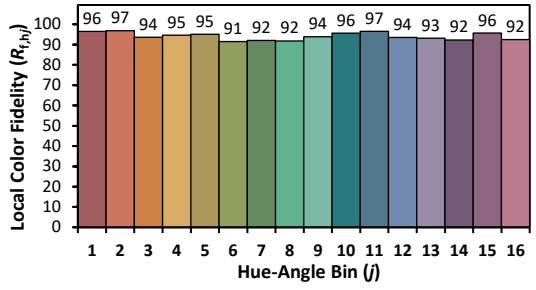
2400K (18K - 30K All on)





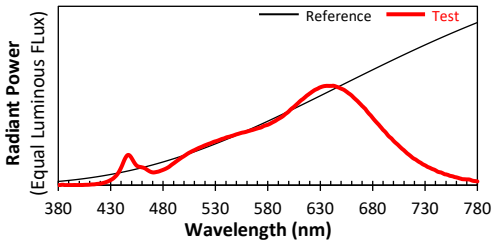


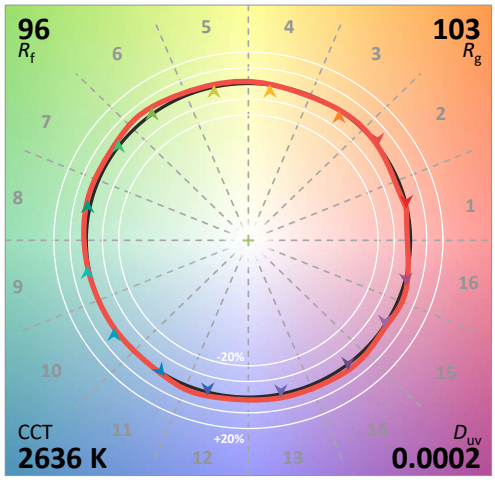


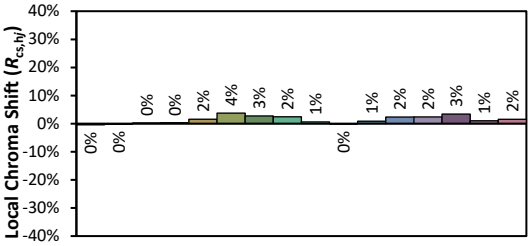


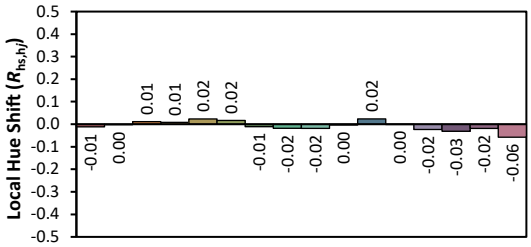
TM-30-18: Data

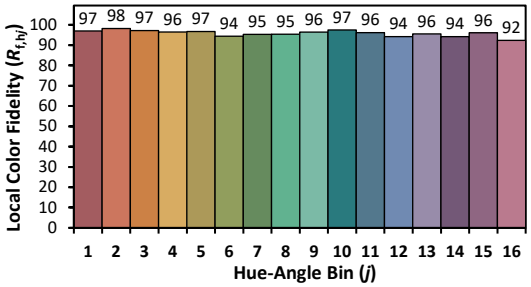
2700K (1 channel on)



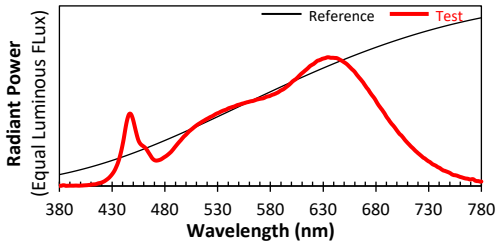


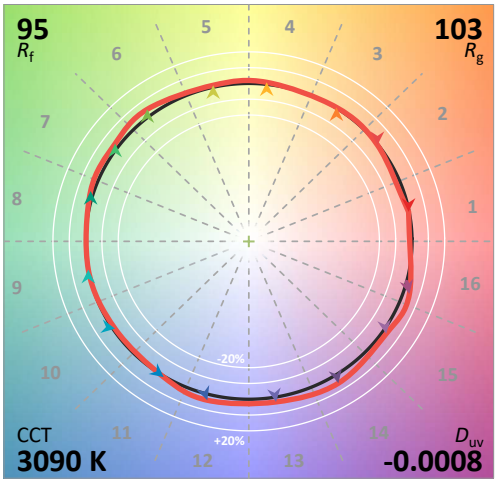


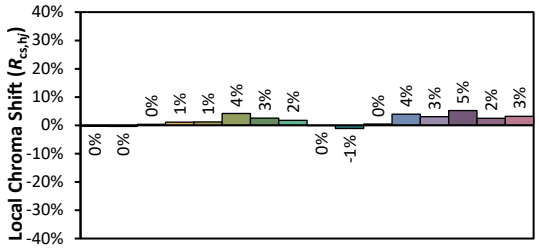


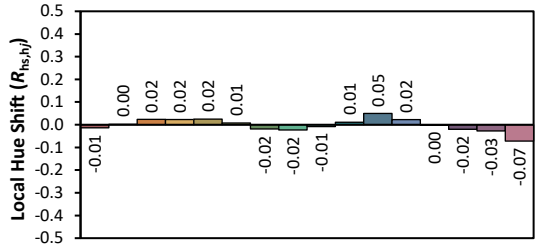


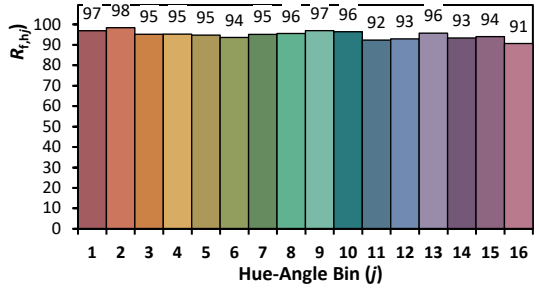
3000K (1 channel on)





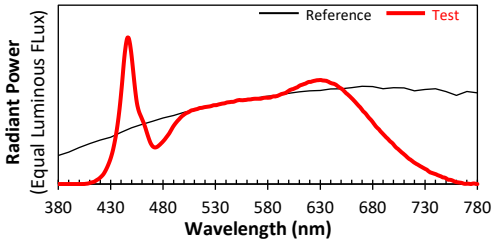


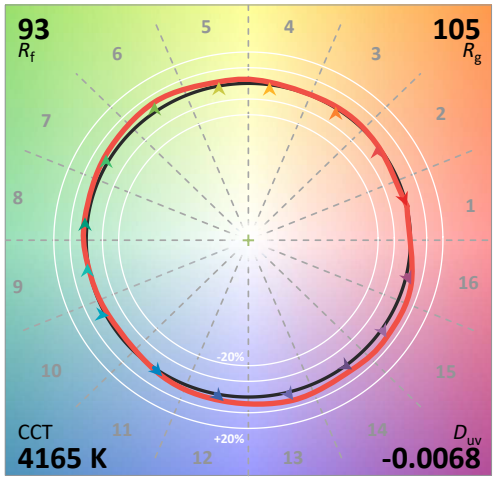


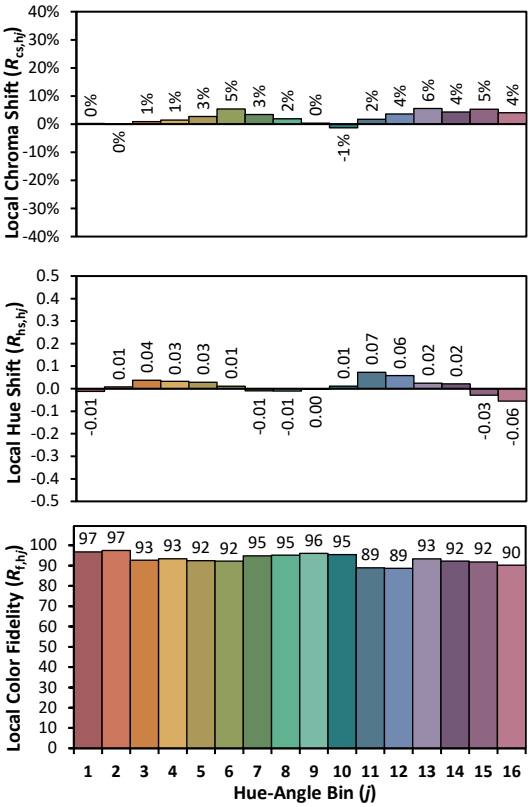


TM-30-18: Data

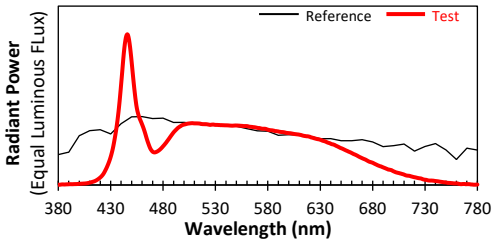
4200K (27K - 65K All on)

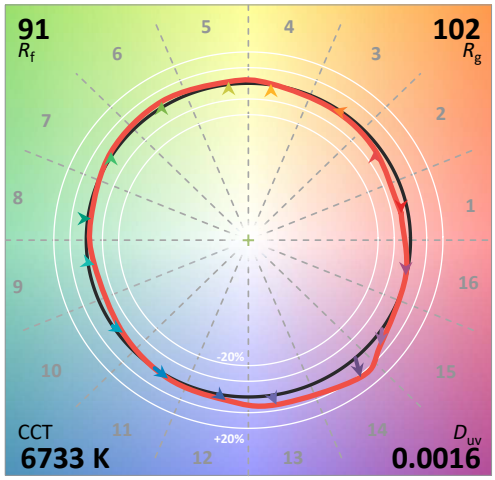


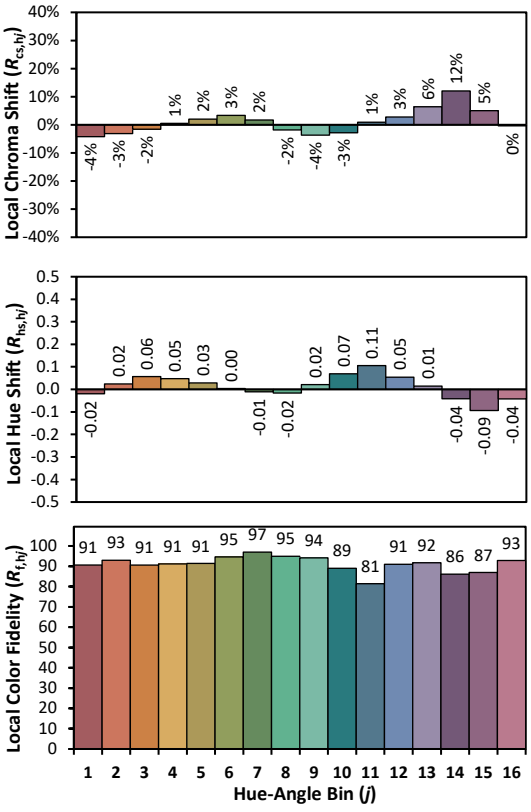




6500K (1 channel on)







Power Consumption

Tested at full power with PS-UNI Series power supplies.

Nominal Length (ft)	LLTW51X2 VHO	
	W/ft	Total Wattage
1	10.1	10.1
2	9.9	19.8
3	9.7	29.1
4	9.5	38.1
5	9.3	46.6
6	9.1	54.8
7	9.0	62.7
8	8.8	70.1
9	8.6	77.2
10	8.4	83.9
11	8.2	90.3
12	8.0	96.2

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

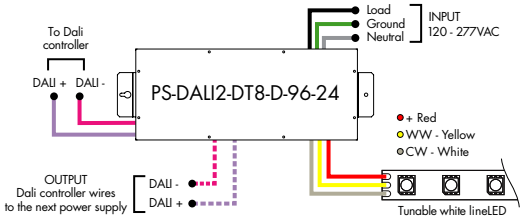
Power Supplies

See fixture and power supply instructions & spec sheet for wiring information. Dimming possible in select models - view Luminii website for list of compatible dimmers.

For use with Tunable White

Ordering Code - DALI2 Dimming Power Supplies 0.1% 120VAC - 277VAC

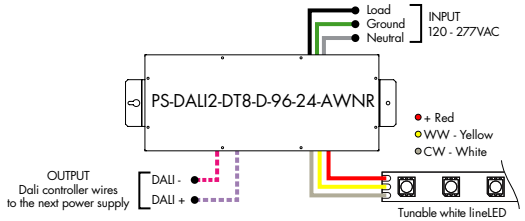
MODEL		INPUT CONTROL		ENVIRONMENT		WATTAGE		OUTPUT
	-		-		-		-	
PS - Power Supply, 120-277VAC		DALI2-DT8 - DALI DT8 Tunable White (0.1%)		D - Dry		96 - 96 Watts		24 - 24 VDC



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

Ordering Code - Athena DALI2 Dimming Power Supplies 0.1% 120VAC - 277VAC

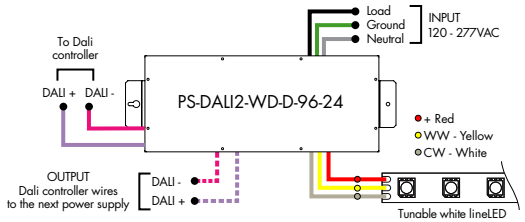
MODEL		INPUT CONTROL		ENVIRONMENT		WATTAGE		OUTPUT		FEATURE
	-		-		-		-		-	
PS - Power Supply, 120-277VAC		DALI2-DT8 - DALI DT8 Tunable White (0.1%)		D - Dry		96 - 96 Watts		24 - 24 VDC		AWNR - Athena



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

Ordering Code - DALI2 Dimming Power Supplies 0.1% 120VAC - 277VAC - for Dim-to-Warm functionality with Tunable White Output

MODEL		INPUT CONTROL		ENVIRONMENT		WATTAGE		OUTPUT
	-		-		-		-	
PS - Power Supply, 120-277VAC		DALI2-WD - DALI2 DT6 Warm Dim (0.1%)		D - Dry		96 - 96 Watts		24 - 24 VDC

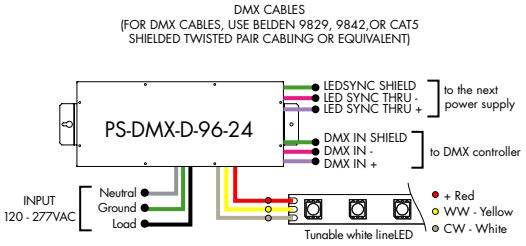


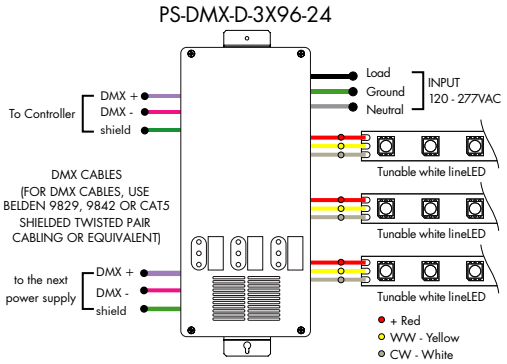
MODELS	96W
Length	14.40"
Width	5.20"
Depth	2.60"

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

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

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





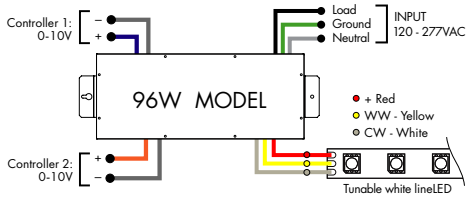
Power Supplies

See fixture and power supply instructions & spec sheet for wiring information. Dimming possible in select models - view Luminii website for list of compatible dimmers.

For use with Tunable White

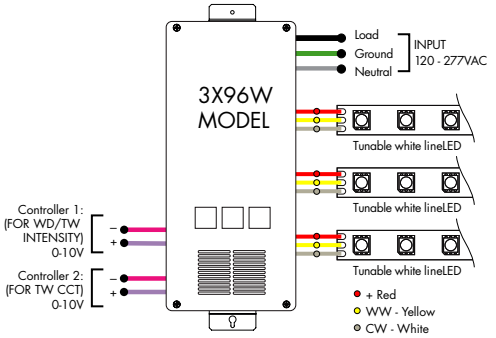
Ordering Code - VintageDim® 0-10V Dimming Power Supplies 0.1% 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS - Power Supply, 120-277VAC	010V-WD - 0 -10V Dimming (0.1%), Standard Warm Dim Curve (with Tunable White LED) 010V-TW - 0 -10V Dimming (0.1%), Two Channel Control, Brightness and CCT1-CCT2 Ratio 010V-2CH - 0 -10V Dimming (0.1%), Two Channel Control, LED1 Brightness and LED2 Brightness 010V-WDX - 0 -10V Dimming (0.1%), Customizable Warm Dim Curve (with Tunable White LED) 010V-2CHX - 0 -10V Dimming (0.1%), Two Channel Control, Customizable Brightness and CCT1-CCT2 Ratio	D - Dry	96 - 96 Watts 3X96 - 3x96 Watts[1]	24 - 24 VDC



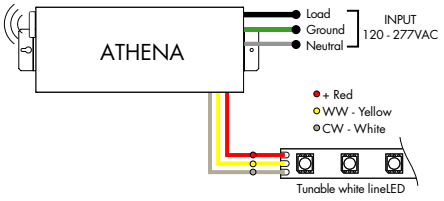
1 - 3x96 is only available with input control options 010V-WD and 010V-TW

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



Ordering Code - Athena VintageDim® 0-10V Power Supply 0.1% 120VAC - 277VAC - for Dim-to-Warm functionality with Tunable White Output

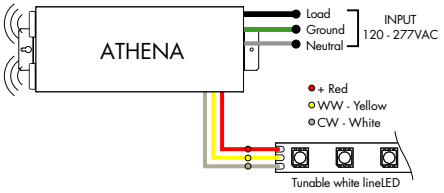
MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT	FEATURE
PS - Power Supply, 120-277VAC	010V-WD - 0-10V Dimming, Standard Warm Dim Curve (with Tunable White LED)	D - Dry	96 - 96 W	24 - 24 VDC	AWNR - Athena



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

Ordering Code - Athena VintageDim® 0-10V Two Channel LED Driver, 0.1% 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT	FEATURE
PS - Power Supply, 120-277VAC	010V-2CH - 0-10V Dimming Two Channel Control, LED1 Brightness and LED2 Brightness	D - Dry	96 - 96 W	24 - 24 VDC	AWNR - Athena



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

Controllers and Decoders

For use with Tunable White Power Supplies

ORDERING CODE

MODEL

DTW-MC

DTW-MC - Tunable White controller

Tunable White wall-mount controller controls lighting fixtures, wireless control of TW lighting fixture. Fits in any standard US switch box. Includes all the outputs in the back of the controller.

Features

- Switch & dimming control function, control range > 20M.
- Smooth transition between light levels.
- Separately operate dimming and color temperature functions.
- Able to control 1 zone with endless receivers. Each receiver can maximally be controlled by 8 remotes.
- Power, temperature color and dimming functions operated by push button after receivers are connected.

Operating Voltage

3V DC battery

Color Parameters

- Brightness
- Saturation
- Fading

ORDERING CODE

MODEL

TW-DMX

TW-DMX - DMX controller

Tunable White DMX wall-mount controller is a fully touch sensitive controller designed in accordance with standard protocol DMX512. Offers fast and accurate color temperature adjustment and brightness dimming of natural white, warm white and cold white. Designed with a touch color wheel, the DMX512 controller can adjust color temperature and brightness for all white LEDs smoothly and accurately. The DMX controller can control 1 zone with endless decoders.

Features

- 1 zone
- 6 color scenes
- DMX Control
- Touch Sensitive Glass Surface
- Dimming and Speed Control
- Memory Function
- Easily Fits Standard US Switch Boxes

Operating Voltage

12 - 24V DC

Color Parameters

- Brightness
- Saturation
- Primary colors
- Fading
- Color changing speed

ORDERING CODE

MODEL

SLD-DIMTW

SLD-DIMTW - Tunable white LED dimming module

The SLD DimTW is a constant voltage warm dimming LED dimming module. The unique dimming module accepts 0-10V control and mimics a smooth, incandescent dimming curve.

Features

- Flicker free 0-100% dimming
- High efficiency up to 97%
- High precision dimming ratio:>1:1000
- Fully isolated plastic housing
- Comply with EN55015 and FCC part 15 without additional input filter and capacitors
- compact size, high reliability
- 3 years warranty

Operating Voltage

8-48 VDC

Controllers and Decoders

For use with Tunable White, RGB/RGBW Power Supplies

Translates controller DMX512 programs for RGB and white LED strips.

Unique DMX address for the decoder can be set easily and displayed by the numeric display on the case. Changing and resetting the DMX address requires manual input.

Use power repeater to expand output.

Operating Voltage

12-36 VDC

Power Capacity

up to 96W at 24V

Operating Temperature Range

from -4°F to +122°F in case

ORDERING CODE

MODEL

DDMX-RGBW

DDMX-RGBW - DMX decoder

The RGBW receiver is easily paired with controller by the click of a button. Receiver can be reset to factory settings at any time.

Each receiver can store one static RGB color, one color sequence, and one brightness setting for the white LED strip. Receivers assigned to the same scene within the same zone will have the same LED static color and color sequence.

Operating Voltage

12-36 VDC

Power Capacity

up to 96W at 24V

Operating Temperature Range

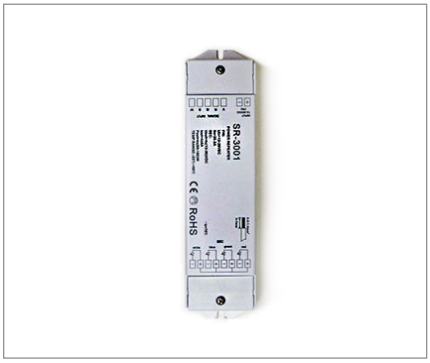
from -4°F to +122°F in case

ORDERING CODE

MODEL

RGBW-RC-R

RGBW-RC-R - RGBW receiver



Extends identical signal when connected in series to an RGBW LED control system. The RGBW signal repeater works with Luminii RGB and RGBW controllers, receivers, and decoders.

RGBW signal can be extended indefinitely when adequate power supply (not included) is connected to the system.

Operating Voltage

12-36 VDC

Power Capacity

up to 96W at 24V

Operating Temperature Range

from -4°F to +122°F in case

ORDERING CODE

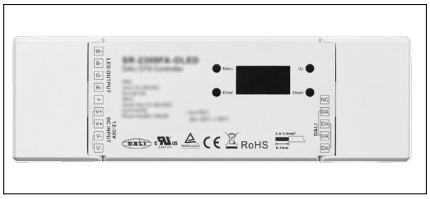
MODEL

RGBW-SR

RGBW-SR - RGBW signal repeater

Controllers and Decoders

For use with Tunable White, RGB/RGBW Power Supplies



ORDERING CODE

MODEL

DALI2-DT8-RGBW

DALI2-DT8-RGBW - DALI-2 RGBW Decoder

A 4-channel DALI2 DT8 decoder designed to control RGB, RGBW, and TW LED fixtures, featuring adjustable color temperature and customizable lumen output.

Voltage/Frequency
12-36VDC

Max Output Power
4 output channels, 60-180W each

Max Output Current
4 output channels, max of 5A each

Ambient Operating Temperature Range
-20 to 50°C

Environment
Dry (IP20)

ORDERING CODE

MODEL

DDMX-5CH-RDM-PRO

DDMX-5CH-RDM-PRO - DMX512 Decoder

DMX512 decoder with RDM functionality features 5 PWM output channels with common anode. High PWM output frequency range allows the product to be used in HD video conferencing spaces. All DMX products to be installed per DMX512 Standard.

Power
96 Watt

Inputs
RJ45, XLR-5Pin, Terminal Block

DMX Channels
1 to 5 settable

PWM Output Resolution Ratio
8 or 16 bit

PWM Output Frequency
500Hz - 30KHz

Output Dimming Curve Gamma Value
0.1 ~ 9.9

ORDERING CODE

MODEL

RGBW-WI-R

RGBW-WI-R - WIFI generator

RGBW-WI-R creates a local network that enables any electronic device (phone, tablet, etc.) to control the RGB/W strip connected to a RGBW-RC-R receiver.

The control functions are achieved through a free application download for Android and iOS devices called REALCOLOR.

Operating Voltage
12-36 VDC

Power Supply
PI-130-24 (included)

Operating Temperature Range
from -4°F to +122°F in case

For use with Tunable White, RGB/RGBW, Pixel Power Supplies

ORDERING CODE

MODEL

TSDMX-E

TSDMX-E - Touchscreen DMX controller

Programmable advanced DMX512 lighting controller featuring a touch-screen interface. Operates as stand alone controller or integrated with most architectural lighting control systems. Can controller endless DMX512 enabled devices.

Mounts to standard single or dual gang wall box with the included power supply inside the junction box. Terminal block design for power and data connections.

Features

- Sleek glass design which sits 0.43" from the wall
- Graphical color display to show selected environment
- Color/dimmer/speed palette
- Color temperature mixing
- Touch sensitive buttons. No mechanical parts
- Touch sensitive wheel allows for accurate color selection
- Multi-zone microSD memory
- Multi-room control with 500 scenes, 10 zones
- 1024 DMX channels. Control 340 RGB fixtures
- USB & Ethernet connectivity for programming and control

Power Supply
7 VDC (included)

Programmability
PC, Mac, Tablet, Smartphone

Output Signal
DMX512 (1024 channels)

Color Parameters

- Brightness
- Saturation
- Speed of color changing sequence
- Fading / dimming / brightness