Lumaris Tunable White Tape Light

The Lumaris tape light takes scene control to the next level, offering a simple and seamless way to add tunable white accent lighting to Lutron connected home projects.

Built on the ultra-reliable Lutron Clear Connect–Type X wireless technology, the Lumaris tape light is a native component within the Lutron platform including controls, apps, programming software, and Lutron Connect cloud services.

A complete Lumaris tape light solution consists of field-cut tunable white LED tape, a wireless controller with integrated LED drivers, high-reliability punch connectors, dedicated wiring, and a plug-in power supply. Aluminum mounting channel and lens for LED tape sold separately by others. Ensure that the channel and lens will accommodate the size of the connector. For wire-to-tape connector dimensions, see page 9.

A remote-mountable, hardwired 96 W power interface is available to power up to three wireless controllers and 49.2 ft (15 m) of LED tape.

Wireless Controller

LED Tape

Power Supply
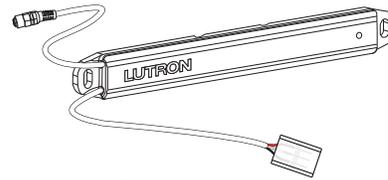
Power Interface

Features

Lighting System

- Seamless integration with HomeWorks QSX and RadioRA 3

- User programmable intensity and color temperature presets

- Warm dim to mimic the dimming curve of an incandescent lamp

- Automatically changes color temperature based on time of day
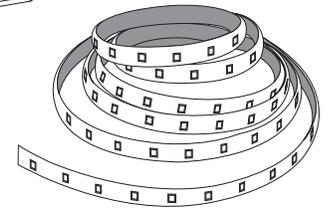
- Manual adjustments via the app or integration

Wireless Controller (with plug-in power supply)

- Continuous, flicker-free dimming from 100% down to 0.1% of measured light output[1]

- 32 W rated load (16.4 ft [5 m] of LED tape)

- 50,000 hours rated lifetime[2]

- Ambient operating temperature: 32 °F to 104 °F (0 °C to 40 °C)

- Uses Clear Connect–Type X wireless communication

- Output short-circuit and overload-protection

- Low-profile, easy to hide

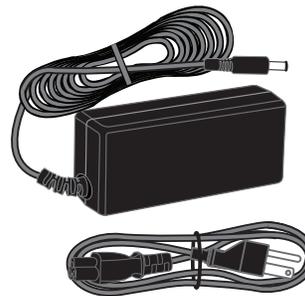- Barrel connector for easy installation

LED Tape

- 2-channel tunable white

- Two color temperature ranges available:
  – Soft White: 1800 K – 3000 K
  – Daylight: 2500 K – 5000 K

- 90+ CRI (color rendering index)

- 3 step MacAdam ellipse (SDCM)

- Lumen output: 200 lumens per foot typical

- Luminous efficacy: 100 lumens per watt typical

- Power consumption: 1.8 W per foot typical

- Rated life: L70 – 50,000 hours

- 2 in (50.8 mm) cuttable segments

- Strong VHB adhesive

- Indoor damp/dry location rated

- Wardrobe closet rated

[1] Tunable white performance is maintained from 100% to 1%.
[2] Plug-in power supply lifetime is rated for 50,000 hours in up to a 77 °F (25 °C) ambient temperature. Increasing ambient temperature may degrade lifetime.

Customer Assistance:
1.844.LUTRON1 (U.S.A. / Canada)

Lumaris Tunable White Tape Light

Model Numbers

Model Number		Description
HomeWorks QSX	**RadioRA 3**	
HWL-TLK-SW	RRL-TLK-SW	Soft White Kit • Wireless controller (with plug-in power supply) • Soft white LED tape (1800 K - 3000 K) - 16.4 ft (5 m) reel • Wire / tape connectors (qty. 5) • 3 conductor cable - 10 ft (3 m)
HWL-TLK-DL	RRL-TLK-DL	Daylight Kit • Wireless controller (with plug-in power supply) • Daylight LED tape (2500 K - 5000 K) - 16.4 ft (5 m) reel • Wire / tape connectors (qty. 5) • 3 conductor cable - 10 ft (3 m)
HWL-TWC-WH	RRL-TWC-WH	Wireless controller (including power supply)
HWL-TWCL-WH	RRL-TWCL-WH	Wireless controller
LU-T05-SW		Soft white LED tape (1800 K - 3000 K) - 16.4 ft (5 m) reel
LU-T05-DL		Daylight LED tape (2500 K - 5000 K) - 16.4 ft (5 m) reel
LU-T30-SW		Soft white LED tape (1800 K - 3000 K) - 98.4 ft (30 m) reel
LU-T30-DL		Daylight LED tape (2500 K - 5000 K) - 98.4 ft (30 m) reel
LU-CK1-TW		Wire / tape connectors (qty. 10)
LU-MK1		Mounting clips (qty. 20)
LU-BP1		Barrel-to-terminal adapter (qty. 3)
LU-WK1-TW		3 x 22 AWG (0.50 mm²) cable - 50 ft (15.2 m)
LU-PH3-A		Power interface with three barrel-to-terminal adapters
T120-24DC-15		36 W plug-in power supply

NOTE: Aluminum mounting channel and lens for LED tape sold separately by others. Ensure that the channel and lens will accommodate the size of the connector. For wire-to-tape connector dimensions, see page 9.

Lumaris Tunable White Tape Light

Specifications

Lighting System

Regulatory Approvals
- Power Supply
  – cULus Listed for USA and Canada
  – FCC Part 15 Class B compliant
  – ICES-003 compliant
  – US DoE Level VI compliant
  – Limited Power Supply
- Wireless Controller
  – cULus Listed for USA and Canada
  – FCC Part 15 Class B compliant
  – ICES-003 compliant
- Tunable White LED Tape
  – cULus Listed for USA and Canada
    · Indoor damp/dry location rated
    · Wardrobe closet rated
  – FCC Part 15 Class B compliant
  – ICES-003 compliant
- Soft White/Daylight Kit (HWL-TLK-DK, HWL-TLK-SW, RRL-TLK-DL, RRL-TLK-SW)
  – When combined, the wireless controller and either of the Tunable White LED tapes comply with California Title 24 requirements as detailed in Reference Joint Appendix JA8 for High Luminous Efficacy Light Sources

Electrical
- Power Supply
  — Input: 100–240 V∼ 50/60 Hz 1 A max
  — Output: 24 V⎓ 1.5 A
- Wireless Controller
  — Input: 24 V⎓ 1.5 A
  — Output: 24 V⎓ 1.33 A 32 W max

Warranty
- The warranty will not cover issues caused by use of incompatible devices (including non-Lutron LED tape and/or power supplies).

Power Interface

Regulatory Approvals
- cULus Listed for USA and Canada
- FCC Part 15
  – Class A (277 V∼)
  – Class B (120 V∼)
- Meets ANSI C62.41 category A surge protection standards up to and including 4 kV
- Meets ULR 8750/CSA C22.2 No. 250.13-14, "Light Emitting Diode (LED) Equipment For Use in Lighting Products"
- Class 2 output; meets ULR 1310/CSA C22.2 No. 223-M91

Performance
- Operating Voltage: 120 V∼/277 V∼ 50/60 Hz
- Patented thermal fold back protection
- Open-circuit protected output
- Short-circuit and overload-protected output
- Output: 24 V⎓ constant voltage at high-end
- Output Load Range: 2 W to 96 W at high-end

Features
- Powers up to three Lumaris controllers and 49.2 ft (15 m) of Lumaris LED tape.
- Protected from input power miswires.
- 100% end-of-line performance tested at a Lutron factory.
- RoHS compliant.
- Restores all settings after power failure.
- Barrier provided for Class 2 separation in the wiring compartment.
- Redundant connections on line terminals for easy daisy-chain wiring.
- Redundant connections on output terminals allow for easy wiring of two LED tape home runs.
- Class 2 output designed to withstand hot swap.
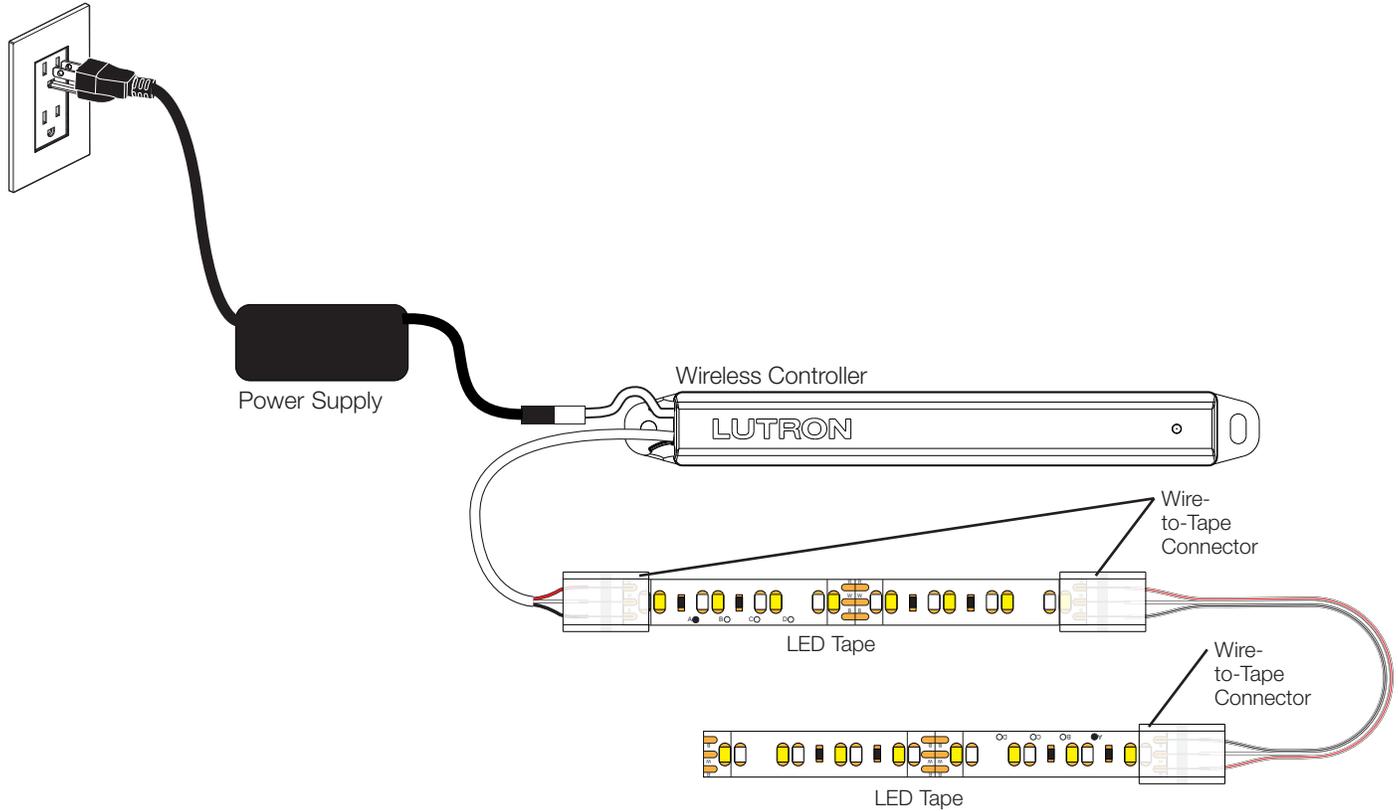- Provided with three barrel-to-terminal adapters.

Environmental
- Minimum Operating Ambient Temperature: ta = 32 °F to 104 °F (0 °C to 40 °C)
- Relative humidity: 0% to 90% non-condensing
- Indoor use only

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Wiring
Plug-in Power Supply

Power Supply

Wireless Controller

LUTRON

Wire-to-Tape Connector

LED Tape

Wire-to-Tape Connector

LED Tape

- The length of the 24 V$=$ cable coming from the power supply may be extended by adding cable of the appropriate gauge (from the table below) to account for the distance. The wireless controller and power supply have 5.5 mm x 2.1 mm barrel connectors.

Maximum Wire Length from the Power Supply to the Wireless Controller: ft (m)				
12 AWG (4.0 mm²)	14 AWG (2.5 mm²)	16 AWG (1.0 mm²)	18 AWG (0.75 mm²)	20 AWG (0.50 mm²)
42.5 (13)	26.5 (8)	17 (5.2)	10.5 (3.2)	6.5 (2)

- Maximum amount of cable allowed on the output of wireless controller is 10 ft (3.0 m). The cable can be added to the beginning or can be used to break up segments of LED tape.

- 3 x 22 AWG (0.50 mm²) stranded cable is provided with the tape light kit or it can be ordered as Lutron P/N LU-WK1-TW.

- For every wire-to-tape connector that is used on the output of a wireless controller, beyond 6, the maximum length of cable allowed is reduced by 6 in (152.4 mm).

- Maximum length of LED tape light is 16.4 ft (5 m) total, regardless of whether LED tape is in a single segment or broken up by cables.

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Wiring *(continued)*

Power Interface Wiring

- Powers up to three Lumaris wireless controllers and 49.2 ft (15 m) of Lumaris LED tape.
- Power interface is grounded by terminal connection.
- Terminals accept 12 AWG to 20 AWG (4.0 mm^2 to 0.50 mm^2) on the power interface. Barrel-to-terminal adapter terminals accept 16 AWG to 20 AWG (1.0 mm^2 to 0.50 mm^2). Torque to 5 in-lbs (0.5 N•m).
  Note: If using 14 AWG (2.5 mm^2) or 12 AWG (4.0 mm^2) wire for LED+ and LED- wires from the power interface to the barrel-to-terminal adapter, splice a small piece of 16 AWG (1.0 mm^2) wire onto a 12 AWG (4.0 mm^2) or 14 AWG (2.5 mm^2) wire to insert into the barrel-to-terminal adapter.
- Maximum wire length between the power interface and the start of the LED tape for different wire sizes is listed below.
- All LED+ and LED- wires from the wireless controllers must be homerun back to the LU-PH3-A power interface for proper operation if wireless controllers are controlled separately. **(Wiring Diagram A)**
- If wiring wireless controllers in a single zone application, LED+ and LED- low-voltage wires can be T-tapped or can be homerun back to the power interface. Either wiring method is acceptable. **(Use Wiring Diagram A or Wiring Diagram B)**
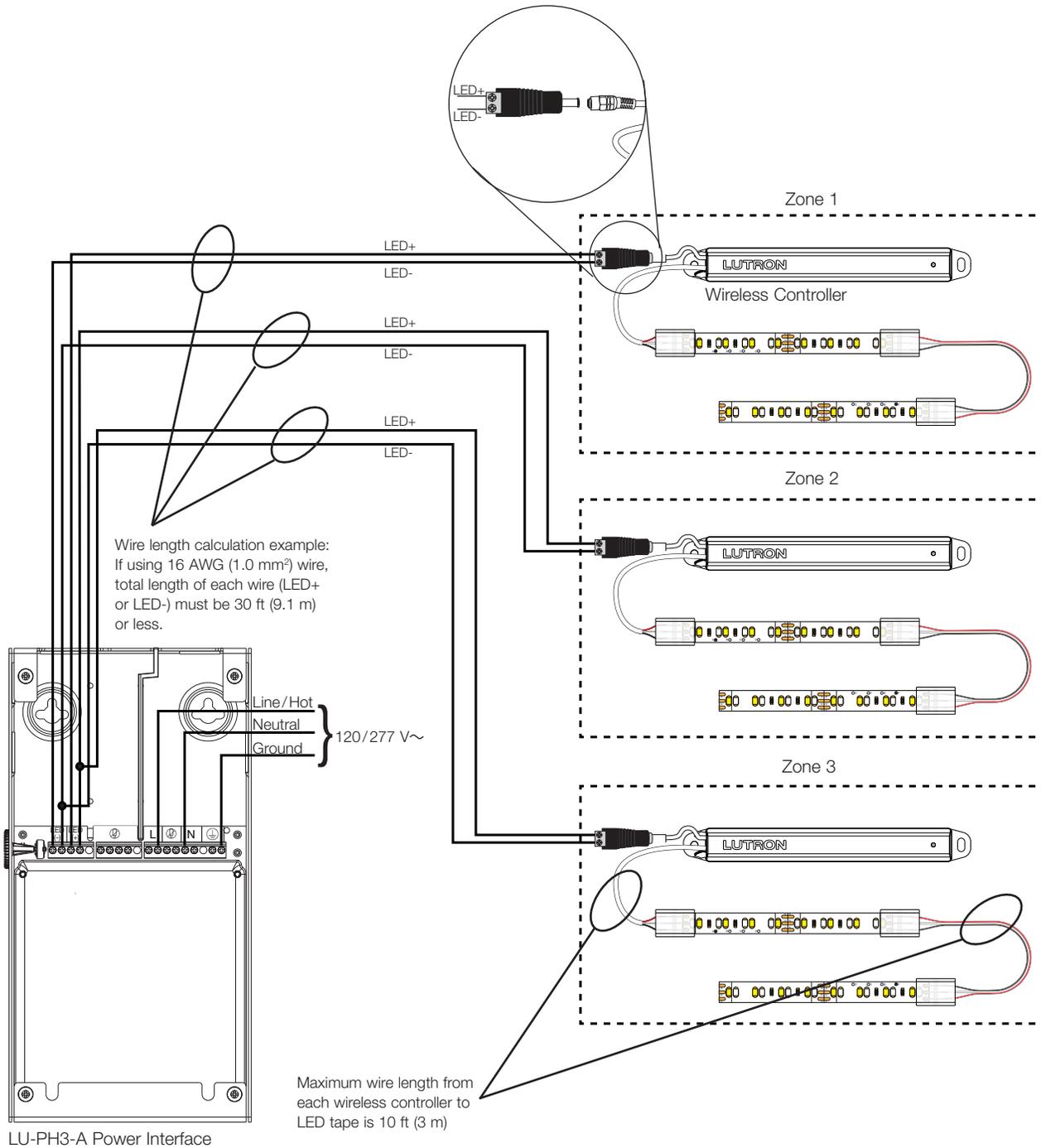
Maximum Wire Length from Power Interface to the Wireless Controller: ft (m)				
12 AWG (4.0 mm^2)	14 AWG (2.5 mm^2)	16 AWG (1.0 mm^2)	18 AWG (0.75 mm^2)	20 AWG (0.50 mm^2)
75 (22.9)	50 (15.2)	30 (9.1)	20 (6.1)	10 (3.0)

- Wiring information is based on a Lumaris power interface controlling three Lumaris wireless controllers, each with 16.4 ft (5 m) of LED tape. Contact Lutron if longer wire runs are required.

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Wiring *(continued)*

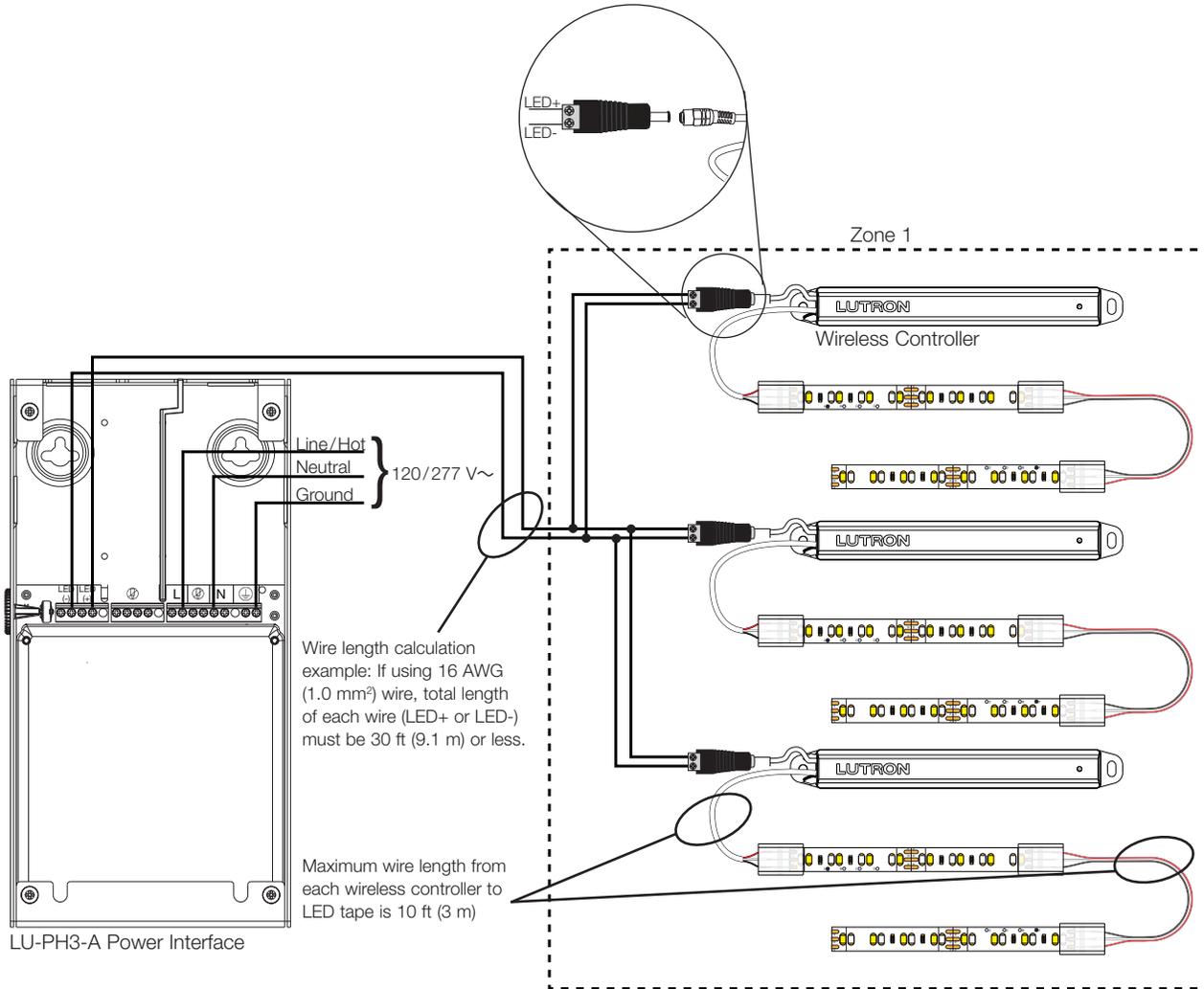**Wiring Diagram A: Controlling Lumaris wireless controllers in separate zones (multi-zone)**

Zone 1

LED+
LED-

LED+
LED-

LED+
LED-

Wireless Controller

Wire length calculation example:
If using 16 AWG (1.0 mm²) wire,
total length of each wire (LED+
or LED-) must be 30 ft (9.1 m)
or less.

Zone 2

Line / Hot
Neutral
Ground
} 120 / 277 V∼

Zone 3

L ⏚ N ⏚

LU-PH3-A Power Interface

Maximum wire length from
each wireless controller to
LED tape is 10 ft (3 m)

Note: When wiring 3 zones (wireless controllers) to the power interface, 2 of the 3 wireless controller LED+ and LED- wires need to be spliced together in the power interface wiring compartment with a wire nut and a single wire run to the terminal block. LED+ and LED- terminals on the wireless controller accept one wire per terminal only.

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Wiring *(continued)*

Wiring Diagram B: Controlling Lumaris wireless controllers in single zone

LED+
LED-

Zone 1

Wireless Controller

Line/Hot
Neutral
Ground
} 120/277 V~

Wire length calculation example: If using 16 AWG (1.0 mm^2) wire, total length of each wire (LED+ or LED-) must be 30 ft (9.1 m) or less.

Maximum wire length from each wireless controller to LED tape is 10 ft (3 m)

LU-PH3-A Power Interface

Lumaris Tunable White Tape Light

Dimensions

All dimensions shown as: in (mm)

Wireless Controller (HWL-TWC-WH, RRL-TWC-WH, HWL-TWCL-WH and RRL-TWCL-WH)

Top View   **End View**

6.745
(171.3)

0.85
(22)

LUTRON
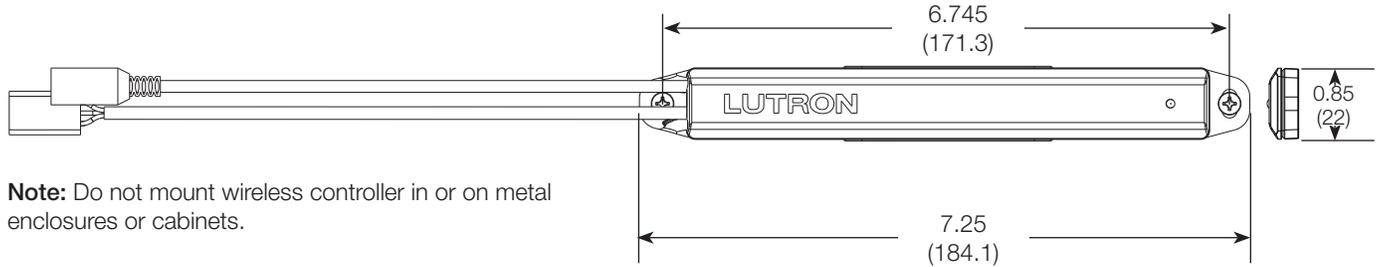
Note: Do not mount wireless controller in or on metal enclosures or cabinets.

7.25
(184.1)

Side View

14.50
(368.3)

14.00
(355.6)

0.35
(9.0)

0.335
(8.5)
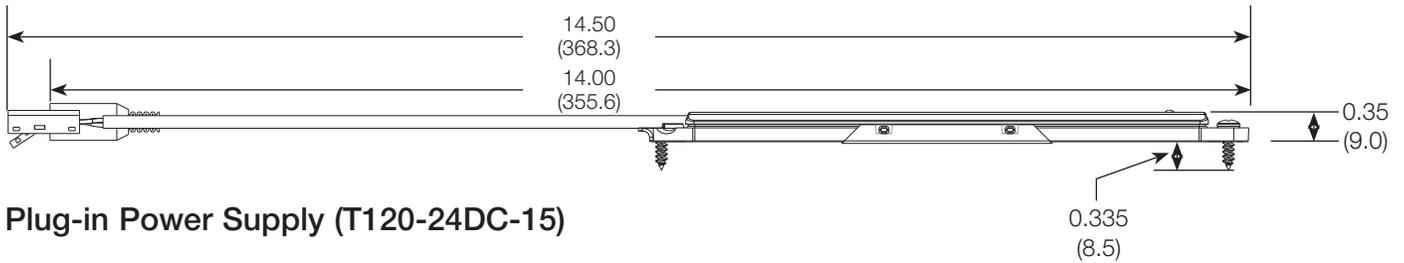
Plug-in Power Supply (T120-24DC-15)

Top View
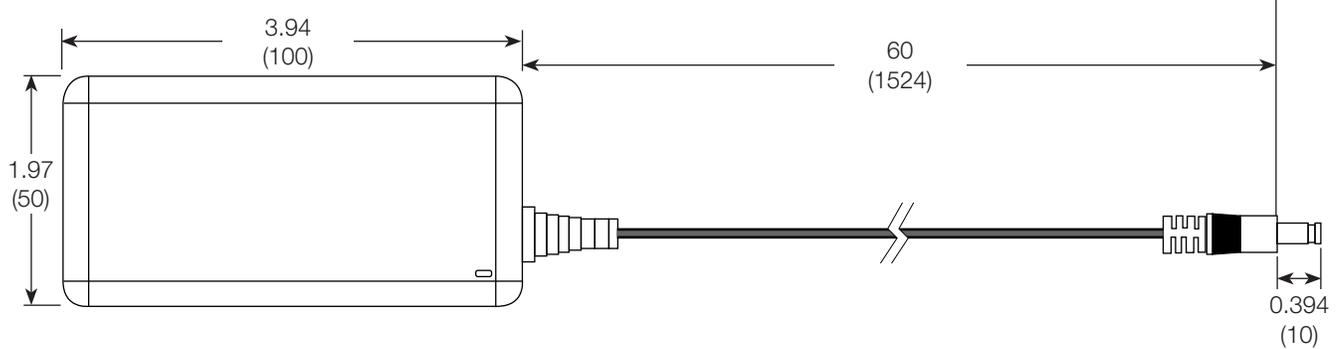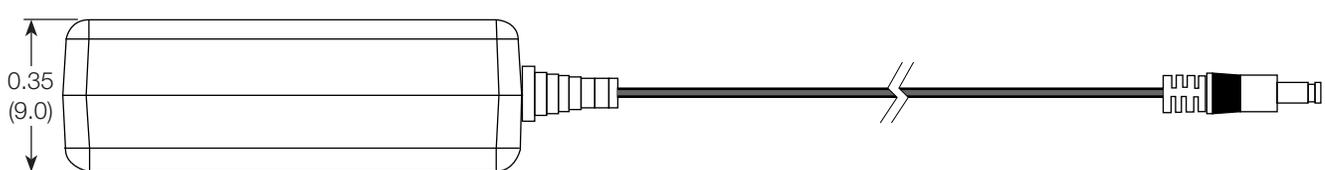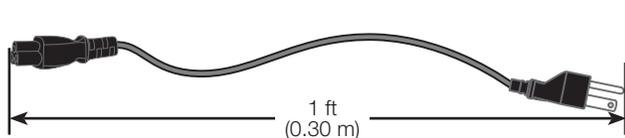
3.94
(100)

60
(1524)

1.97
(50)

0.394
(10)

Side View

0.35
(9.0)

Power Cord

1 ft
(0.30 m)

Lumaris Tunable White Tape Light

Dimensions *(continued)*

All dimensions shown as: in (mm)

Wireless Controller Mounting Bracket

2.40
(61.0)

0.850
(21.6)

0.224
(5.7)

Wireless Controller Mounting Screw

0.27
(6.85)

0.093
(2.3)

0.50
(12.7)

0.138
(3.5)
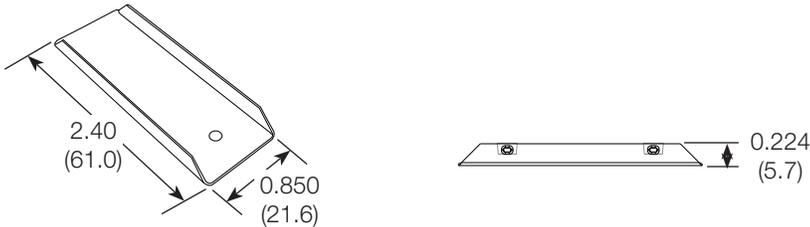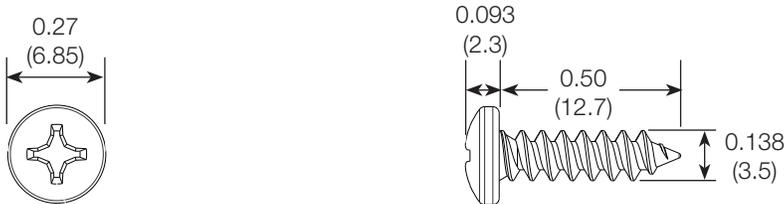
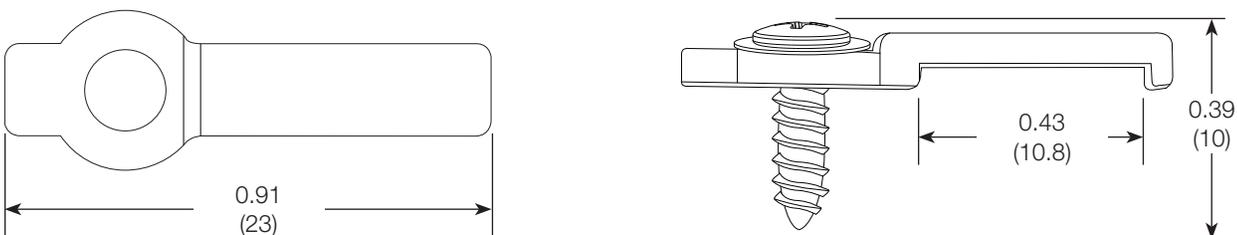### Wire-to-Tape Connector (LU-CK1-TW)

0.52
(13)

0.28
(7)

0.85
(22)
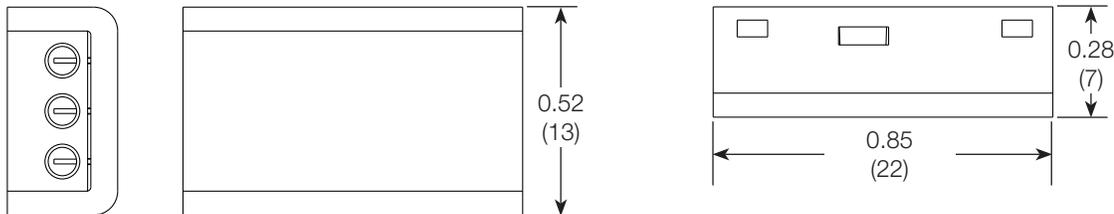
LED Tape (LU-T05-SW or LU-T05-DL , LU-T30-SW, LU-T30-DL)

CAUTION: Overheating Risk. May result in moderate injury or product damage. Do not power LED tape while coiled, on a spool, or directly to 120 V∼ power. Unroll or install before applying power.
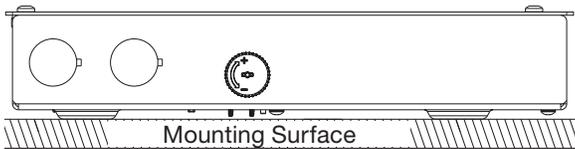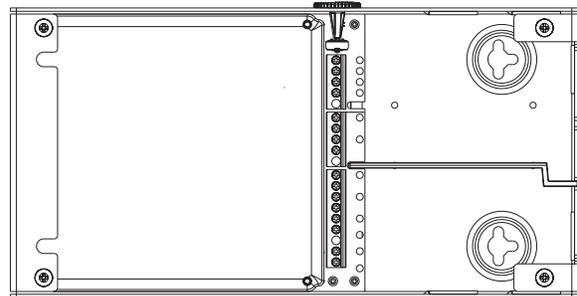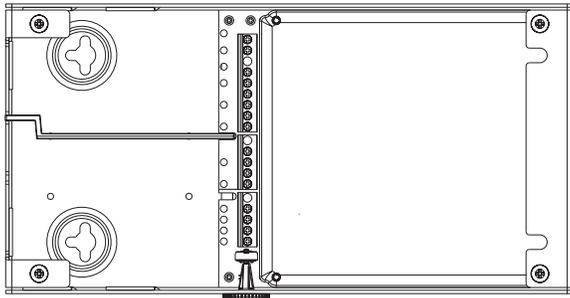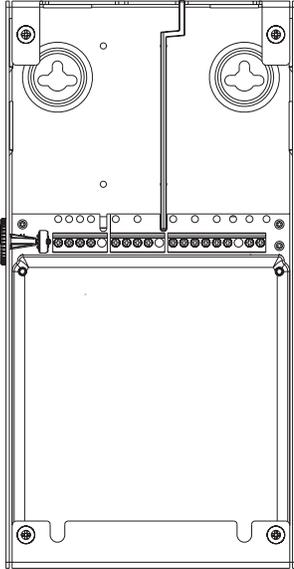
2.0
(50.8)

0.394
(10)

LUTRON TUNABLE WHITE   A● B○ C○ D○   A● B○ C○ D○   LUTRON TUNABLE WHITE

Mounting Clip (LU-MK1)

0.91
(23)

0.43
(10.8)

0.39
(10)

Lumaris Tunable White Tape Light

Dimensions *(continued)*

All dimensions shown as: in (mm)

Power Interface Enclosure (LU-PH3-A)

Knockouts

- Sides
  – 4 locations: 1/2 in or 21 mm trade size
- Top
  – 2 locations: 1/2 in or 21 mm trade size

Customer Assistance:
1.844.LUTRON1 (U.S.A. / Canada)
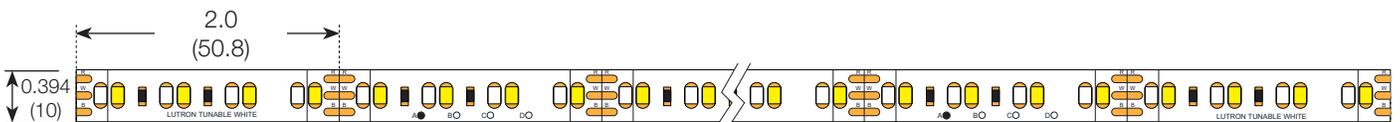
Lumaris Tunable White Tape Light

Mounting Options - Power Interface Enclosure [1,2]

Mounting Surface

Note: The gray knob on the side of the enclosure is not used and does not need to be accessed after installation. This knob has no affect on the operation of the power interface.

[1] Any other mounting configuration will require additional mechanical support. Improper installation may result in hazards to personnel or property.

[2] Mount the power interface in a position where it can be easily located and accessed if service or troubleshooting is necessary.

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