# Please Read **LUTRON**® Dimming and Switching **Panels**

Installation Guide LCP128™ (LCP) and GRAFIK Systems™ (LP and CCP)



LCP Panel shown

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### Overview

Use this guide to successfully install a dimming and switching panel. This guide describes panel installation, wiring, and load activation.



English



### LCP128<sup>TM</sup> (LCP) (120 V $\sim$ only)

See page 5 for 230/220-240 V  $\sim$ 

Example



Prefix

**LCP** = LCP dimming panel

#### Module Types

#### \_X \_S \_D \_Q \_A \_M \_F \_T

List modules in the order shown above. Insert the quantity before each module code. Omit codes for modules not used in panel. See table below for limits on numbers of modules per panel.

**X** = Four-Circuit Switching (Relay) (XP)

- $\mathbf{S} = \text{One-Circuit Dimming}(1\text{U})$
- **D** = Two-Circuit Dimming (2U)
- **Q** = Four-Circuit Dimming (4U)
- **A** = Four-Circuit Adaptive Dimming (4A)
- $\mathbf{M}$  = Four-Circuit Motor (4M)
- $\mathbf{F}$  = Four-Circuit Quiet Fan Speed (4FSQ)  $\mathbf{T}$  = 0-10 V, DALI (broadcast), DSI, and PWM
- Ballast Control (TVM)

#### Feed Voltage

120 for 120 V  $\sim$ 

### Branch Circuit Breaker Rating

#### Feed Type/Input Ratings

 $\rm FT$  = Feed-through panel (circuit breakers not included) / 120 V  $\sim$ 

3M or 3ML = 1 phase 3 wire feed (split phase) / 120/240 V  $\sim$ 

4M or 4ML = 3 phase 4 wire feed / 120/208 V  $\sim$ 

#### Branch Circuit Breaker Rating

Omit for feed-through panels 20 for 20 A branch circuit breakers

Frequency - All Model Numbers and Voltages 50/60 Hz

#### Output (Load) Ratings

<u>Module Type</u>	Rating
XP	16 A per circuit
1U, 2U, 4U	16 A per module
4A	16 A per module, 10 A per output
4M	16 A per module, 5 A per output
	(1/4 HP motor),
	1 motor per output
4FSQ TVM	2 A per output (single ceiling fan) 50 mA per channel, 750 mA per system

Module Qu	uantity Limits		
Panel Size	Feed type	TVM	4A 4U 4M XP
Mini	Feed-through	NA	Any combination up to 3 modules
Mini	Feed-through	0-4	Any combination up to 2 modules; must have 1 4U or XP module minimum;
			each 4U or XP module can control only 2 TVM modules
Mini	Breakers	NA	Any combination up to 3 modules 0
Mini	Breakers	0-4	Any combination up to 2 modules; 0
			must have 1 4U module minimum;
			each 4U module can control only 2 TVM modules
Standard	Feed-through	NA	Any combination up to 9 modules
Standard	Feed-through	0-12	Any combination up to 8 modules; must have 1 4U or XP module minimum;
			each 4U or XP module can control only 2 TVM modules
Standard	Breakers (main lugs)	NA	Any combination up to 9 modules 0
Standard	Breakers (main lugs)	NA	Any combination up to 7 modules
Standard	Breakers (main lugs)	0-12	Any combination up to 7 modules; 0
			must have 1 4U module minimum;
			each 4U module can control only 2 TVM modules
Standard	Breakers (main lugs)	0-12	Any combination up to 5 modules; must have 1 4U or XP module minimum;
			each 4U or XP module can control only 2 TVM modules

#### Notes

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• Consult Lutron for panels with custom breaker needs.

• TVM = 0 is a TVM-ready panel; TVM modules can easily be installed in the future.

• TVM = NA is not TVM-ready



### GRAFIK Systems™ (LP) (all voltages)





#### Prefix

**LP** = LP dimming panel

#### Number of Dimming Modules

Indicates number of 4-circuit (4U) dimming modules in the panel: 1 through 8; also indicates number of full load circuits

#### Number of Dimming Circuits

Indicates number of dimming circuits in the panel: 4, 8, 12, 16, 20, 24, 28, or 32; each module has four dimming circuits

Input Ratings

#### Feed Voltage

**120** = 120 V∼ **230** = 230 V∼ (CE) **240** = 220-240 V∼ (non-CE)

### Feed Type

2M or 2ML = 1 phase 2 wire feed	120 V $\sim$
<b>3M or 3ML</b> = 1 phase 3 wire feed (split phase)	120/240 V $\sim$
4M or 4ML = 3 phase 4 wire feed	120/208 V $\sim$
Mxx = Main Breaker;	

**xx** = breaker size in amps (custom panel option) **IS** = 3 phase 4 wire isolation switch (230/220-240 V  $\sim$  only)

#### Branch Circuit Breaker Rating

20 for 20 A branch circuit breakers (120 V ~ only)
20 A branch circuit breakers have a 16 A continuous load rating
15 for 15 A branch circuit breakers (120 V ~ only)
15 A branch circuit breakers have a 12 A continuous load rating
13 for 13 A branch circuit breakers (230 V ~ CE only)
16 for 16 A branch circuit breakers (220-240 V ~ non-CE only)
Custom Panel Suffix (optional)

Indicates panel with special options



### Panel Model Number Guide (continued)

#### GRAFIK Systems<sub>TM</sub> (CCP) (120 V $\sim$ only) Example CCP-2X2L 1A4T-1204ML-20-CGP\_\_\_ Prefix Modules: Feed Branch Custom Voltage Quantity and Type Circuit Panel Suffix Feed Breaker Type Rating Prefix Feed Type / Input Ratings **CCP** = Custom combination panel 120 V $\sim$ Module Types XLAMFT List modules in the order shown above. Insert the quantity before each module code. Omit codes for modules not used in panel. See table below for limits on numbers of modules per panel.

- **X** = Four-Circuit Switching (Relay) (XP)
- L = Four-Circuit Dimming (4U)
- A = Four-Circuit Adaptive Dimming (4A)
- $\mathbf{M} =$ Four-Circuit Motor (4M)
- **F** = Four-Circuit Quiet Fan Speed (4FSQ)
- T = 0-10 V, DALI (broadcast), DSI, and PWM Ballast Control (TVM)

#### Feed Voltage

120 for 120 V  $\sim$ 

# (contact Lutron for custom options)

- FT = feed-through panel (circuit breakers not included) /
- **3M or 3ML** = 1 phase 3 wire feed (split phase) / 120/240 V  $\sim$
- 4M or 4ML = 3 phase 4 wire feed / 120/208 V  $\sim$
- $\mathbf{2} = 1$  phase 2 wire input breakers (mini only)
- $\mathbf{3} = 1$  phase 3 wire input breakers (mini only)
- 4 = 3 phase 4 wire input breakers (mini only)

#### Branch Circuit Breaker Rating

- **20** = 20 A branch circuit breakers
- 15 = 15 A branch circuit breakers

#### Custom Panel Suffix (optional)

Indicates panel with special options

#### Frequency

(All Model Numbers and Voltages): 50/60 Hz

#### **Output (Load) Ratings**

<u>Module Type</u>	Rating
XP, 4U	16 A per circuit
4A	16 A per module, 10 A per output
4M	16 A per module, 5 A per output
	(1/4 HP motor)
4FSQ	2 A per output (single ceiling fan)
TVM	50 mA per channel, 750 mA per system

**LUTRON** 

Module Qu	uantity Limits				
Panel Size	Feed type	TVM	4A 4U 4M XP		
Mini	Feed-through	NA	Any combination up to 3 modules		
Mini	Feed-through	0-4	Any combination up to 2 modules; must have 1 4U or XP module minimum;	;	
			each 4U or XP module can control only 2 TVM modules		
Mini	Breakers	NA	Any combination up to 3 modules 0		
Mini	Breakers	0-4	Any combination up to 2 modules; 0		
			must have 1 4U module minimum;		
			each 4U module can control only 2 TVM modules		
Standard	Feed-through	NA	Any combination up to 9 modules		
Standard	Feed-through	0-12	Any combination up to 8 modules; must have 1 4U or XP module minimum;		
			each 4U or XP module can control only 2 TVM modules		
Standard	Breakers (main lugs)	NA	Any combination up to 9 modules 0		
Standard	Breakers (main lugs)	NA	Any combination up to 7 modules		
Standard	Breakers (main lugs)	0-12	Any combination up to 8 modules; 0		
			must have 1 4U module minimum;		
			each 4U module can control only 2 TVM modules		
Standard	Breakers (main lugs)	0-12	Any combination up to 5 modules; must have 1 4U or XP module minimum;	;	
			each 4U or XP module can control only 2 TVM modules		

#### Notes

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· Consult Lutron for panels with custom breaker needs.

• TVM = 0 is a TVM-ready panel; TVM modules can easily be installed in the future.

• TVM = NA is not TVM-ready



### GRAFIK Systems™ (CCP/LCP) (230/220-240 V ∼ only)



#### Prefix

**CCP** = Custom combination panel

#### Module Types

#### \_X \_L \_E \_A \_M \_T

List modules in the order shown above. Insert the quantity before each module code. Omit codes for modules not used in panel. See table below for limits on numbers of modules per panel.

- **X** = Four-Circuit Switching (Relay) (XP)
- L = Four-Circuit Dimming (4U)
- **E** = Four-Circuit Electronic Low Voltage Dimming (4E)
- A = Four-Circuit Adaptive Dimming (4A)
- $\mathbf{M} =$ Four-Circuit Motor (4M)
- T = 0-10 V, DALI (broadcast), DSI, and PWM Ballast Control (TVM)

#### Feed Voltage

**230** = 230 V ∼ (CE) **240** = 220-240 V ∼ (non-CE)

#### Feed Type

FT = feed-through panel (circuit breakers not included)

**4IS** = 3 phase 4 wire isolation switch

- **2M** = 1 phase 2 wire input breakers (mini only)
- **4M** = 3 phase 4 wire input breakers (mini only)

#### Region Suffix

**CE** = 230 V $\sim$ **AU** = 220-240 V $\sim$ Note: Should match feed voltage

#### Controller Type

Omit for single-link circuit selector 2L = 2Link™ circuit selector LCP = LCP128

#### Custom Panel Suffix (optional)

Indicates panel with special options <u>Frequency</u>

### (All Model Numbers and Voltages)

50/60 Hz

#### Output (Load) Ratings

Module Type	Rating
XP	16 A per circuit
4U (230 V~)	13 A per module, 10 A per output
4U (240 V~)	16 A per module
4A	13 A per module, 8 A per output
4E	16 A per module, 10 A per output
4M	16 A per module, 5 A per output
	(1/4 HP motor), 1 motor per output
TVM	50 mA per channel, 750 mA per system

Module Qu	antity Limits						
Panel Size	Feed type	TVM	4A	4U	4E	4M	XP
Mini	Feed-through	NA	Any com	nbination up to	o 3 modules		
Mini	Feed-through	0-4	Any com	nbination up to	2 modules;	must have 1 4U or	XP module minimum;
			each 4U	or XP module	e can control	only 2 TVM module	S
Mini	Input breakers	NA	Any com	nbination up to	o 3 modules		0
Mini	Input breakers	0-4	Any com	nbination up to	o 2 modules;		0
			must ha	ve 1 4U modu	le minimum;		
			each 4U	module can	control only 2	TVM modules	
Standard	Feed-through	0-12	Any com	nbination up to	o 8 modules;	must have 1 4U or	XP module minimum;
			each 4U	or XP module	e can control	only 2 TVM module	S
Standard	Input breakers	0-12	Any com	nbination up to	o 8 modules;		0
			must ha	ve 1 4U modu	le minimum;		
			each 4U	module can	control only 2	TVM modules	
Standard	Input breakers	0-12	Any com	nbination up to	o 6 modules;	must have 1 4U or	XP module minimum;
			each 4U	or XP module	e can control	only 2 TVM module	S

#### Notes

- Consult Lutron for panels with custom breaker needs.
- TVM = 0 is a TVM-ready panel; TVM modules can easily be installed in the future.

• TVM = NA is not TVM-ready



### Mini Panel

Dimensions are in inches (mm).





### **Standard Panel**

Dimensions are in inches (mm).



#### **Mounting Guidelines**

- For Indoor Use Only! NEMA, Type 1 enclosure, IP20.
- Panel generates heat. Mount only where ambient temperature is 32-104 °F (0-40 °C).
- Relative humidity must be < 90% non-condensing.
- Reinforce wall structure for panel weight and local codes; see table.
- Allow 12 in. (305 mm) clearance above and below panel.
- Mount within 7° of true vertical.
- Mount panel where audible noise is acceptable. (Internal relays click.)
- Mount panel so line (mains) voltage wiring is at least 6 ft. (1.8 m) from audio or electronic equipment and associated wiring.
- Install in accordance with all national and local electrical codes.

No. Modules	Max. Heat BTUs (Kcal)/Hr.	Max. Weight w/o Packaging Pounds (kg)
1	90 (22.68)	24 (11)
2	170 (42.84)	35 (16)
3	250 (63.00)	37 (17)
4	330 (83.16)	68 (25)
5	410 (103.32)	71 (26)
6	490 (123.48)	74 (27)
7	570 (143.64)	77 (28)
8	650 (163.80)	80 (29)
9	730 (183.96)	83 (30)



**Caution!** This equipment is air-cooled. Vents must not be blocked or you will void the warranty.



Caution! 230 V  $\sim\,$  panels with 13 A circuit breakers are intended for industrial or commercial use only.



LP8/32-1204ML-20 shown

#### Surface Mounting

- Lutron recommends using 1/4 in. (6 mm) mounting bolts (maximum size accepted by keyholes).
- Reinforce wall structure as required for weight and local codes.
- Do not mount panel directly to wall board/drywall.

#### **Recess Mounting**

- Mount to wall stud by screwing through slots in corners of panel.
- Mount panel between flush and 1/8 in. (3 mm) below finished wall surface.

#### **Recommended Mounting Heights\***

(for LCP128 systems)	
Mini	45 in. (1143 mm)
Standard	25 in. (635 mm)

\* Measure from floor to bottom of panel; optimal viewing height for controller.



## System Wiring Overview

Review the options below for information on wiring your panel correctly into your specific system.







### **B.** LP or CCP panel as a part of a *GRAFIK* Eye 4000 lighting system: Refer to the GRAFIK Eye

4000 Installation, Setup, and Operation Manual and the system overview pictured here for detailed wiring information.





Power panel link

### Feed and Load Wiring Overview

#### Feed Wiring (Mains Voltage Wiring)

- Preferred feed wiring entry for panels with main lugs/isolation switch is from the bottom left of the panel.
- Preferred feed wiring entry for feed-through panels is from the top or bottom left of the panel, wired directly to module terminal blocks.
- Run wiring so that line (mains) voltage wiring will be at least 6 ft. (1.83 m) from sound or electronic equipment and its wiring.
- Refer to Feed Wiring pages for more information.

#### Load Circuit Wiring

- Connect load wiring to the appropriate terminal block set for each module.
- For 230 V  $\sim\,$  and 240 V  $\sim\,$  panels, "Hot" is referred to as "Live". Therefore, terminals will be labeled DL and L.
- The Dimmed Hot/Live (DH/DL) terminal block is grouped with a numbered Hot/Live (H/L) (H1, H2, etc./L1, L2, etc.). The number represents both the module and circuit breaker number.
- Output terminal blocks accept one #14-#10 AWG (2.5-4.0 mm<sup>2</sup>) wires. Preferred entry is from the top left of the panel.
- Refer to Load Wiring pages for more information.



**Caution!** Common neutrals are not permitted. Run separate neutrals for each load circuit.



**Caution!** Panels require entry of wires as specified. Improper entry will block serviceable parts and impede air flow through the panel.

### **Temporary Lighting**

You do not need to install a temporary distribution panel. Connect load wires into the appropriate terminal blocks. Each input breaker can supply power to a load while the bypass jumper protects the module from load faults.



**Caution!** Verify that the panel is fed from the correct voltage. A feed miswire or loss of a feed neutral can cause over-voltage damage to the equipment. Do NOT remove bypass jumpers at this point--they protect the modules from load faults.





### LP/LCP/CCP Panels

#### **Feed-Through Panels** (all voltages)

Number of Modules	Feed Type	Max. Feed
1 2 3 4 5 6 7 8 9	1Ø, 2W #14-#10 AWG (1.5-4.0 mm²)	120 V∼: 20 A 230 V∼: 13 A or 16 A 220-240 V∼: 16 A

#### Panels with Breaker (120 V $\sim$ only)

Number of Modules	Feed Type
1 2 3	1Ø, 2W 1Ø, 3W 3Ø, 4W #14-#10 AWG (1.5-4.0 mm²)

#### Panels with Main Lugs (120 V $\sim$ only)

	Number of Modules	Feed Type	Maximum Feed
3	4 5 6 7 8 9	1Ø, 3W or 3Ø, 4W #14-#2/0 AWG (25-70 mm²)	175 A

#### Panels with Breaker (220-240 V $\sim$ and 230 V $\sim$ only)

#### Panels with Isolation Switch (220-240 V $\sim$ and 230 V $\sim$ only)

Number of	Feed Type	Number of	Feed Type	Maximu 230 V~	Maximum Feed 230 V∼ 220-240 V∼	
Noquies		IVIOQUIES				
1	1Ø, 2W	4				
2	1Ø, 2W	5	3Ø, 4W			
3	3Ø, 4W	6		125 A	125 A	
	#14-#12 AWG	7	#14-#2/0 AWG			
	(1.5-4.0 mm <sup>2</sup> )	8	(25-70 mm²)			



## Feed-Through Panel: Feed and Load Wiring (all voltages)

#### **General Notes**

- Typical dimming/switching legs shown.
- Do not remove bypass jumpers until after load wiring has been verified.

#### Wire sizes for power feed, to each input

- Power feed: #14 AWG (2.5 mm<sup>2</sup>) to #10 AWG (4.0 mm<sup>2</sup>)
- Neutral feed: #14 AWG (2.5 mm<sup>2</sup>) to #10 AWG (4.0 mm<sup>2</sup>)

#### Wire sizes for load wiring, from each output

- Dimmed hot (live): #14 AWG (2.5 mm<sup>2</sup>) to #10 AWG (4.0 mm<sup>2</sup>)
- Load neutral: #14 AWG (2.5 mm<sup>2</sup>) to #10 AWG (4.0 mm<sup>2</sup>)

#### **Control Circuit Power**

- Supplies power for internal operation.
- Requires dedicated feed with same voltage and phase as panel.
- Must be 1/4 in. (6 mm) away from PELV (Class 2: USA) control wiring harness.
- Panel voltage (see pages 2-3) indicates feed voltage.
- $\bullet$  For 230 V  $\sim$  and 240 V  $\sim$  panels, "Hot" is referred to as "Live". Therefore, terminals will be labeled L and DL.

4-Circuit Dimming Module (4U) 4-Circuit Adaptive Dimming Module (4A) 4-Circuit ELV Dimming Module (4E: 230 V∼ and 220-240 V∼ only) 4-Circuit Quiet Fan Speed Module (4FSQ)



#### 4-Circuit Switching (Relay) Module (XP)





For 0-10 V, PWM, Tridonic® DSI, and DALI loads. Each TVM controls two consecutive circuits of lighting and are the first circuits in the panel. Maximum low-voltage ballast control current: 50 mA per zone, 750 mA per panel. Dimming or switching module is used to switch power to the ballast.







### Feed-Through Panel: Feed and Load Wiring (continued)

#### 4-Circuit Motor Module (4M)



2-Circuit Dimming Module (2U) (LCP and CCP only)



#### 1-Circuit Dimming Module (1U) (LCP only)



#### Connecting an NGRX-FDBI to a Panel



Refer to FDBI Installation Sheet for detailed wiring.

### Panel with Main Lugs: Feed Wiring



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### Panel with Main Lugs: Load Wiring

Typical Dimming/Switching Leg Shown

4-Circuit Dimming Module (4U) 4-Circuit Adaptive Dimming Module (4A) 4-Circuit ELV Dimming Module (4E: 230 V $\sim$  and 220-240 V $\sim$  only) 4-Circuit Fan Speed Control Module (4FSQ)



#### 4-Circuit Switching Module (XP)



#### 2-Circuit Dimming Module (2U) (LCP only)



### 1-Circuit Dimming Module (1U) (LCP only)



### Load Wiring for TVM Module

For 0-10 V, PWM, and Tridonic® DSI loads. Each TVM controls two consecutive circuits of lighting and are the first circuits in the panel. Maximum lowvoltage ballast control current: 50 mA per zone, 750 mA per panel.



### Connecting an NGRX-FDBI to a Panel

For Hi-Lume® FDB or Eco-10<sup>TM</sup> Fluorescent Dimming Ballast





Caution! Do not remove bypass jumpers until after load wiring has been verified.

**4-Circuit Motor Module** (4M)





### Activate Loads in Bypass

#### A. Complete load wiring.

B. Check that the bypass jumpers are in place. These jumpers protect from load faults and must be used to check load wiring when it is installed or modified.



**Caution!** Verify that the panel is fed from the correct voltage. A feed miswire or loss of a feed neutral can cause damage to the equipment.

#### C. Turn circuit breaker 1 ON.

The load(s) should energize, the breaker should not trip, and total load current must be within the circuit breaker's limit and less than or equivalent to 16 A.

Circuit breaker 1 powers the control wiring as well as Circuit 1's dimmer and load(s). Check that the Power OK LED on the Controller (*LCP128*) or circuit selector (LP or CCP) is ON. If the Power OK LED is OFF, turn OFF the control circuit breaker (breaker 1) and check for a miswire on the low voltage link.

#### D. Turn next circuit breaker ON.

The load should energize, the breaker should not trip, and total load current must be within the circuit breaker's limit and less than or equal to 16 A.

E. Repeat step D for each circuit with completed load wiring.



LP3/12-1204ML-20 shown

### **Complete Installation**

#### You have completed your panel installation.

For Onsite Factory Commissioning, call Lutron Technical Support and select Startup to schedule a field service visit. Allow for 10 working days between day of call and scheduled visit.

**If you purchased Telephone Startup** (*LCP128* only), stop here and complete the Control Location, Panel, and Control Station Tables that are located in the back of the *Setup and Operation*. Once the tables are complete, call Lutron Technical Support and select Startup. Please call 24 hours prior to desired system startup.

In the U.S., Canada, and the Caribbean: 1.800.523.9466 In Mexico: +1.888.235.2910 In Europe: +44.207.702.0657 In Asia: +65.6220.4666 In Japan: +81.355.758.411 In all other countries: +1.610.282.6701

## **Remove Bypass Jumpers**

- A. After all load wiring has been checked, turn circuit breakers OFF.
- **B.** Remove and store the bypass jumpers for possible future use.
- C. Turn circuit breakers ON.



**Note.** All circuits are now set to the default Non-Dim load type. Non-Dim load types will respond by immediately going to full ON in any lighting scene (except the OFF scene).



**Caution!** Reuse the bypass jumpers whenever work is being done on a load. Damage caused by short-circuits and miswiring is not covered by the product warranty.



Module with 4 outputs shown

Panel installation, control station wiring, and load activation are now complete. Next Step: Refer to the *Setup and Operation Manual* to set up the functions and operation of the panel.



### Notes



#### Lutron Electronics Co., Inc.

#### One Year Limited Warranty

For a period of one year from the date of purchase, and subject to the exclusions and restrictions described below, Lutron warrants each new unit to be free from manufacturing defects. Lutron will, at its option, either repair the defective unit or issue a credit equal to the purchase price of the defective unit to the Customer against the purchase price of comparable replacement part purchased from Lutron. Replacements for the unit provided by Lutron or, at its sole discretion, an approved vendor may be new, used, repaired, reconditioned, and/or made by a different manufacturer.

If the unit is commissioned by Lutron or a Lutron approved third party as part of a Lutron commissioned lighting control system, the term of this warranty will be extended, and any credits against the cost of replacement parts will be prorated, in accordance with the warranty issued with the commissioned system, except that the term of the unit's warranty term will be measured from the date of its commissioning.

#### EXCLUSIONS AND RESTRICTIONS

This Warranty does not cover, and Lutron and its suppliers are not responsible for:

- 1. Damage, malfunction or inoperability diagnosed by Lutron or a Lutron approved third party as caused by normal wear and tear, abuse, misuse, incorrect installation, neglect, accident, interference or environmental factors, such as (a) use of incorrect line voltages, fuses or circuit breakers; (b) failure to install, maintain and operate the unit pursuant to the operating instructions provided by Lutron and the applicable provisions of the National Electrical Code and of the Safety Standards of Underwriter's Laboratories; (c) use of incompatible devices or accessories; (d) improper or insufficient ventilation; (e) unauthorized repairs or adjustments; (f) vandalism; or (g) an act of God, such as fire, lightning, flooding, tornado, earthquake, hurricane or other problems beyond Lutron's control.
- 2. On-site labor costs to diagnose issues with, and to remove, repair, replace, adjust, reinstall and/or reprogram the unit or any of its components.
- 3. Equipment and parts external to the unit, including those sold or supplied by Lutron (which may be covered by a separate warranty).
- 4. The cost of repairing or replacing other property that is damaged when the unit does not work properly, even if the damage was caused by the unit. EXCEPT AS EXPRESSLY PROVIDED IN THIS WARRANTY, THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF ANY TYPE, INCLUDING ANY IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY. LUTRON DOES NOT WARRANT THAT THE UNIT WILL OPERATE WITHOUT

INTERRUPTION OR BE ERROR FREE.

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