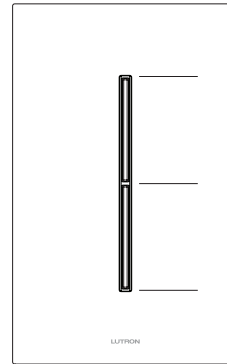


GRAFIK T RF C•L Hybrid Keypads

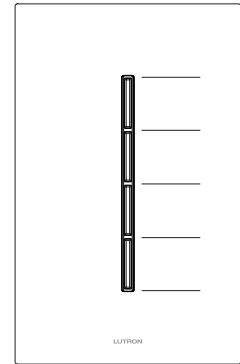
RadioRA 2 architectural GRAFIK T RF C•L Hybrid keypads function as a dimmer and keypad combined into a single device. Hybrid keypads are great for retro-fit applications since they eliminate the need to install two separate devices. Normal keypad operation is available if no load is connected or load burns out.¹

Features

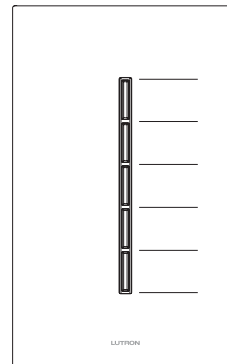
- Hybrid keypad allows for local control of load as well as typical keypad functionality.
- Hybrid keypad will function as a normal keypad when no load is installed or load burns out.¹
- Custom, backlit, engraved, scene/zone descriptions on faceplate.
- Dynamic Backlighting Management (DBM) automatically adjusts the intensity of the backlit engraving to ensure text is readable in any light.
- All buttons are fully programmable, including the raise/lower functionality.
- C•L technology with microprocessor based dimming for control of dimmable LED lamps.
- If using LED bulbs, they must be Lutron compatible! For compatibility and performance information, visit our website at www.lutron.com/led, which is constantly being updated.
- Optional neutral connection available for superior LED dimming performance.¹
- Simple touch control.
- Distinctive architectural aesthetic.
- Low-end and high-end trim are available for improved LED dimming performance.
- Installs in single-pole or multi-location applications. Companion devices are available for multi-location control with a hybrid keypad (maximum 4 companion devices per keypad, 1 main control per circuit).²
- Use Lutron GRAFIK T wallplates (sold separately). See **Colors and Finishes** on page 13 for details.
- Lutron GRAFIK T wallplates snap on with no visible means of attachment.



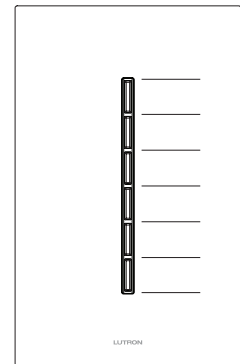
2 Button Keypad



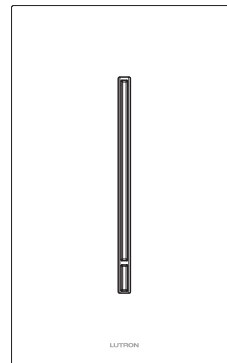
4 Button Keypad



5 Button Keypad



6 Button Keypad



Companion Device

¹ If no load is connected, a neutral connection is required.

² Companion devices provide control of local load only.

GRAFIK T RF C•L Hybrid Keypads

Model Numbers

Hybrid Keypads ¹	
RRT-GH2B	Clear Connect RF Technology
RRT-GH4B	250 W Dimmable LED ²
RRT-GH5B	600 W Incandescent/Halogen
RRT-GH6B	400 VA (300 W) Magnetic Low-Voltage with Halogen based lamps
	3.3 A (400 VA) Dimmable Fluorescent ³
	3.3 A (400 W) Hi-lume 1% 2-wire LED driver (10 driver maximum)
	Neutral connection available
	Multi-location dimmer
Companion Device	
RT-GRDW	Companion device (works with hybrid keypad, dimmer or switch)

¹ Not for use with receptacles or appliances (e.g., garbage disposals). See Application Note #109 for compatibility with dimmable receptacles.

² If using LED bulbs, they must be Lutron compatible! For compatibility and performance information, visit our website at www.lutron.com/led, which is constantly being updated.

³ Includes Mark X®, Tu-Wire, and POWERSENSE® ballasts.

Design Features

- When neutral is connected, the Hybrid Keypad can be used as a Normal Keypad even if there is no load.
- If load is connected the top button will toggle the load (before commissioning).
- Internal dimmer can be assigned to any button on the Hybrid Keypad and can be programmed to be controlled by any Keypad.
- Can be installed in either single location or multi-location (with a Companion Device) installations. Companion devices connected to Hybrid Keypad will control local lighting zone only.
- Can be installed in two-wire or neutral wire applications.
- Dynamic Backlighting Management (DBM) automatically adjusts the intensity of the backlit engraving to ensure text is readable in any light.
- At the press of a keypad button, lights fade ON or OFF to desired levels and shades/draperies open or close to desired shade positions.
- Keypad buttons are programmable to select scene or room preset levels or positions. Buttons can also be programmed with raise or lower functions.
- Faceplates are ordered separately and can be custom engraved with scene or zone description.

GRAFIK T RF C•L Hybrid Keypads

Specifications

Model Numbers	Hybrid Keypads: RRT-GH2B, RRT-GH4B, RRT-GH5B, RRT-GH6B Companion Device: RT-GRDW Wallplate ¹ : LWT-G-XXX-E, LWT-GG-XXX-E, LWT-GGG-XXX-E, LWT-GGGG-XXX-E, LWT-GT-XXX-E, LWT-GGT-XXX-E, LWT-GGGT-XXX-E, LWT-TG-XXX-E, LWT-GTT-XXX-E, LWT-GGTT-XXX-E, LWT-TGG-XXX-E, LWT-GTTT-XXX-E, LWT-TTG-XXX-E, LWT-TGGG-XXX-E, LWT-TTTG-XXX-E, LWT-TTGG-XXX-E
Power	120 V~ 50/60 Hz
Typical Power Consumption	Hybrid Keypad: 0.20 W Companion Device: 0.10 W Test conditions: load is off, if connected.
Regulatory Approvals	Compliant with UL 1472, Compliant with CSA C22.2 NO. 184.1-15, Compliant with NOM 003, Compliant with Part 15 of the FCC rules and Industry Canada license-exempt IC standards, IFTEL
Environment	Ambient operating temperature: 32 °F to 104 °F (0 °C to 40 °C), 0% to 90% humidity, non-condensing. Indoor use only.
Communications	Hybrid Keypads communicate with the RadioRA 2 system through Radio Frequency (RF) and must be located within 30 ft (9 m) of a repeater. Companion devices are not required to be within a specific range of a repeater.
ESD Protection	Tested to withstand electrostatic discharge without damage or memory loss.
Surge Protection	Tested to withstand surge voltages without damage or loss of operation, in accordance with IEEE C62.41-1991 Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits.
Power Failure (load connected only)	Power failure memory: should power be interrupted, the control will return to its previous state when power is restored.
Mounting	Requires a U.S. wallbox. 3 ½ in (89 mm) deep recommended, 2 ¼ in (57 mm) deep minimum.
Wiring (load connected only)	Uses conventional 3-way and 4-way wiring. Total multi-location wire length (blue wire) between all units must not exceed 150 ft (45 m).
Warranty	www.lutron.com/TechnicalDocumentLibrary/warranty.pdf

¹ "XXX" in the model number represents color/finish code. See **Colors and Finishes** on page 13 for details.

GRAFIK T RF C•L Hybrid Keypads

Ganging and Derating

When combining controls in the same wallbox, derating is required. See **Load Type and Capacity**. No derating is required for companion devices.

Load Type and Capacity

Control 1,2,3	Load Type	Not Ganged	End of Gang	Middle of Gang	Neutral Connection
RRT-GH2B RRT-GH4B RRT-GH5B RRT-GH6B	LED	250 W	250 W	250 W	Optional
	MLV Halogen 4,5,6	400 VA (300 W)	400 VA (300 W)	400 VA (300 W)	
	Incandescent/ Halogen	600 W	500 W	400 W	
	Lutron Hi-lume 1% 2-wire LED Driver	3.3 A (400 W), 10 drivers max	3.3 A (400 W), 10 drivers max	3.3 A (400 W), 10 drivers max	
	Dimmable Fluorescent 7	3.3 A (400 VA)	3.3 A (400 VA)	3.3 A (400 VA)	Required

¹ Designed for use with permanently installed LED, incandescent, tungsten halogen, or magnetic low voltage transformers with halogen based lamps.

² Power Boosters/Load Interfaces: can be used to control power boosters/load interfaces. For a list of compatible power boosters/load interfaces see **Compatible Power Boosters and Load Interfaces**. When using with power boosters/load interfaces, the neutral must be connected.

³ Not for use with receptacles or appliances (e.g., garbage disposals). See Application Note #109 for compatibility with dimmed receptacles.

⁴ Low-Voltage Applications: Use only with magnetic (core and coil) low-voltage transformers with halogen based lamps. Not recommended for use with electronic (solid-state) low-voltage transformers but UL® listed for dimmable ELV transformers.

⁵ Operation of a low-voltage circuit with lamps inoperative or removed may result in transformer overheating and premature failure. Lutron strongly recommends the following:

- Do not operate low-voltage circuits without operative lamps in place.
- Replace burned-out lamps as soon as possible.
- Use transformers that incorporate thermal protection or fused transformer primary windings to prevent transformer failure due to overcurrent.

⁶ When using the hybrid keypad to control MLV halogen fixtures, the maximum lamp wattage is determined by the efficiency of the transformer, with 70%–85% as typical. For actual transformer efficiency, contact either the fixture or transformer manufacturer. The total VA rating of the transformer(s) shall not exceed the VA rating of the hybrid keypad.

⁷ Includes Mark X®, Tu-Wire, and POWERSENSE® ballasts.

GRAFIK T RF C•L Hybrid Keypads

Minimum Load

Keypad		LED ¹		Incandescent/ Halogen		MLV Halogen ²	
Application	Number of Companion Devices	With Neutral Connected	With Neutral Disconnected	With Neutral Connected	With Neutral Disconnected	With Neutral Connected ²	With Neutral Disconnected
Single Pole	0	1 LED lamp ³	3 LED lamps ³	5 W	80 W	40 W	80 W
Multi-location	1	1 LED lamp ³	4 LED lamps ³	5 W	120 W	40 W	120 W
Multi-location	2	1 LED lamp ³	5 LED lamps ³	5 W	160 W	40 W	160 W
Multi-location	3	1 LED lamp ³	6 LED lamps ³	5 W	200 W	40 W	200 W
Multi-location	4	1 LED lamp ³	7 LED lamps ³	5 W	240 W	40 W	240 W

¹ Includes Lutron compatible LED replacement lamps and Hi-lume 1% 2-wire LED driver.

² Must meet transformer minimum load requirements.

³ If using LED bulbs, they must be Lutron compatible! For compatibility and performance information, visit our website at www.lutron.com/led, which is constantly being updated.

Compatible Power Boosters and Load Interfaces

Some local controls can be used to control power boosters or load interfaces. Up to three power boosters or load interfaces can be used with one control. See table below for a list of controls and compatible power boosters and load interfaces. When controlling power boosters/load interfaces, the neutral must be connected.

Control	Phase Adaptive Power Modules (PHPM-PA-120-WH & PHPM-PA-DV-WH) ¹	3-wire Fluorescent Power Modules (PHPM-3F-120-WH & PHPM-3F-DV-WH) ²	Switched Power Module (PHPM-SW-DV-WH) ³	0-10 V Interface and Switching Module (GRX-TVI) ⁴
RRT-GH2B RRT-GH4B RRT-GH5B RRT-GH6B	✓	✓		✓

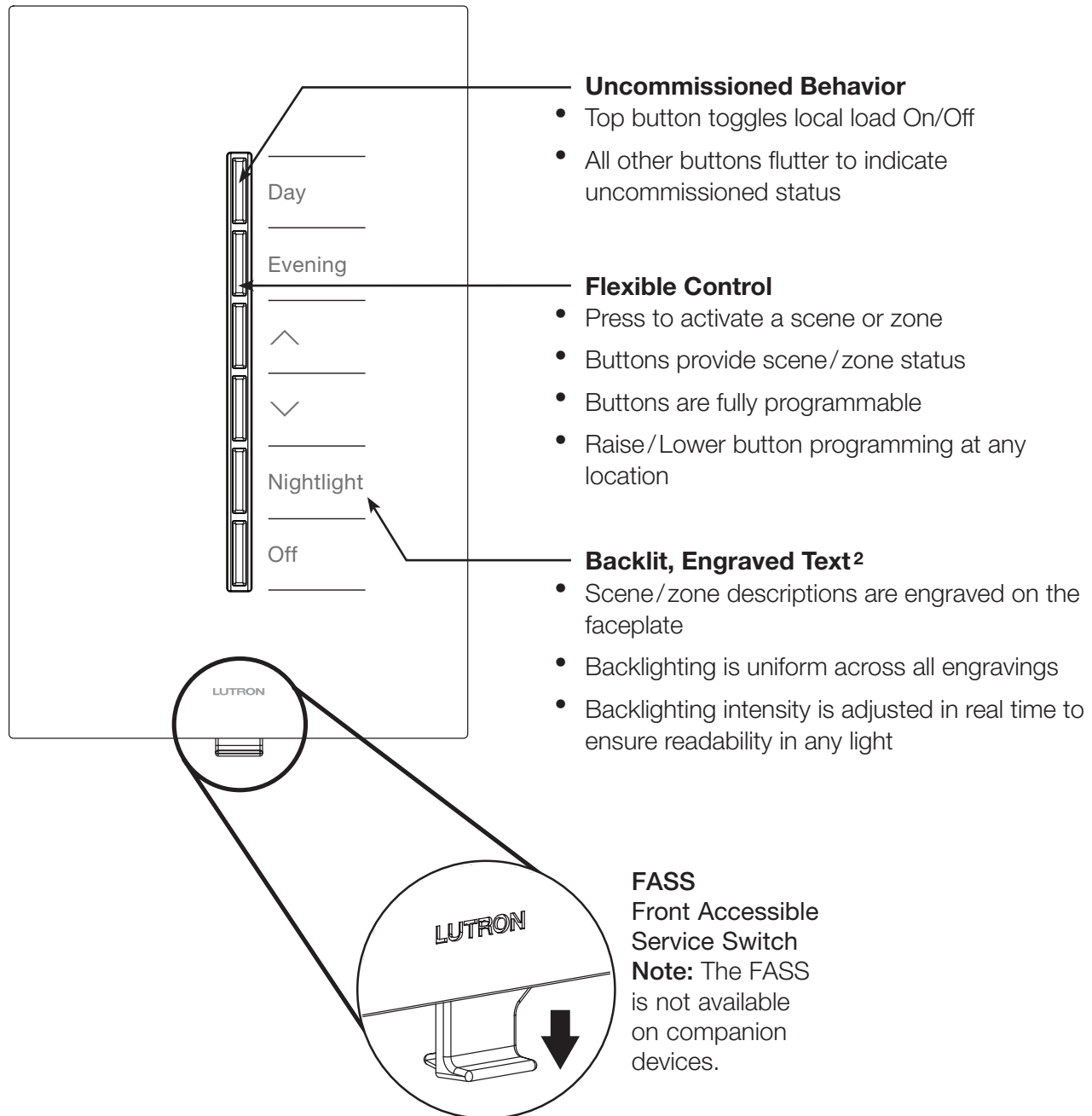
¹ See Lutron P/N 369356 for wiring diagrams.

² See Lutron P/N 369355 for wiring diagrams.

³ See Lutron P/N 369357 for wiring diagrams.

⁴ See Lutron P/N 369247 for wiring diagrams.

GRAFIK T RF C•L Hybrid Keypads

Operation¹**IMPORTANT NOTICE:****FASS - Front Accessible Service Switch**

To replace bulb(s), remove power by pulling the FASS down fully on all main controlling devices. After replacing bulb(s), push the FASS back up fully to restore power to the control(s).

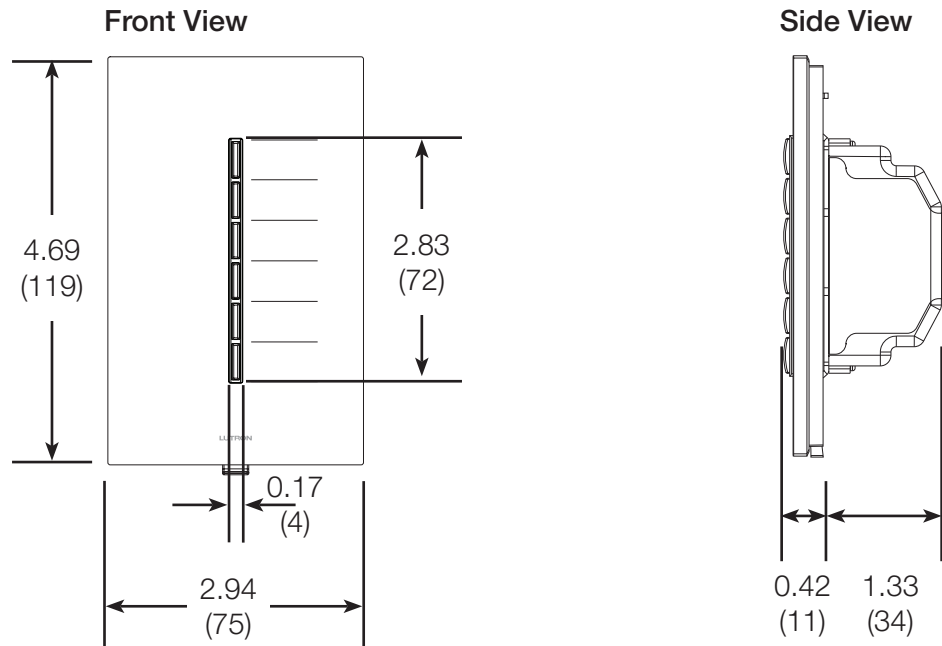
¹ 6 button configuration is shown for reference.

² Engraving is generic text. All engraving is customizable.

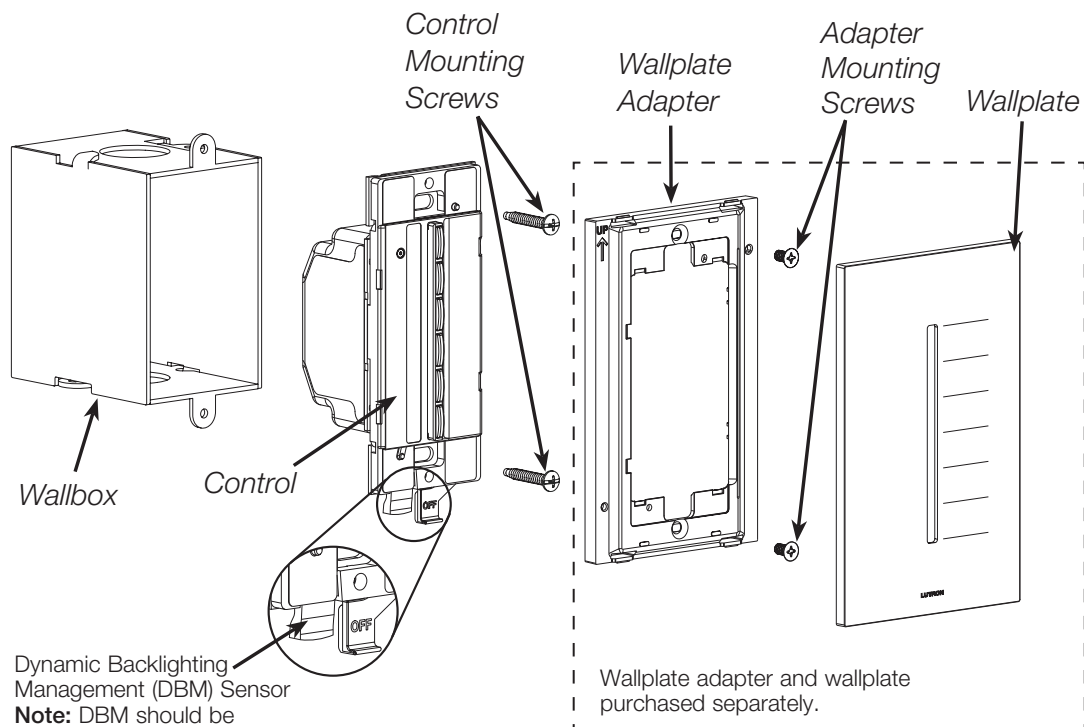
GRAFIK T RF C•L Hybrid Keypads

Dimensions

All dimensions are shown as $\frac{\text{in}}{(\text{mm})}$



Mounting and Parts Identification

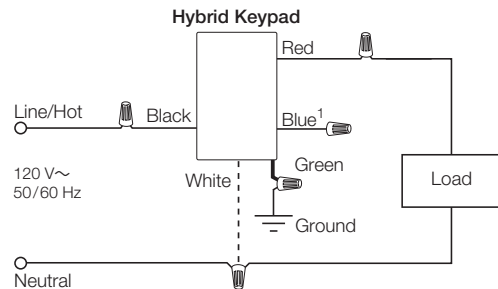


GRAFIK T RF C•L Hybrid Keypads

Wiring Diagrams

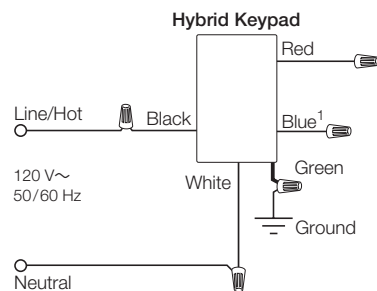
Wiring Diagram 1

Single Location Installation with Optional Neutral^{1,2}
RRT-GH2B, RRT-GH4B, RRT-GH5B, or RRT-GH6B



Wiring Diagram 2

Normal Keypad Wiring (No load connected)
RRT-GH2B, RRT-GH4B, RRT-GH5B, or RRT-GH6B



¹ When using controls in single location installations, cap the blue wire. **Do not** connect the blue wire to any other wiring or to ground.

² When neutral wire connection is unavailable, cap the white wire. **Do not** connect the white wire to any other wiring or to ground.

Continued on next page...

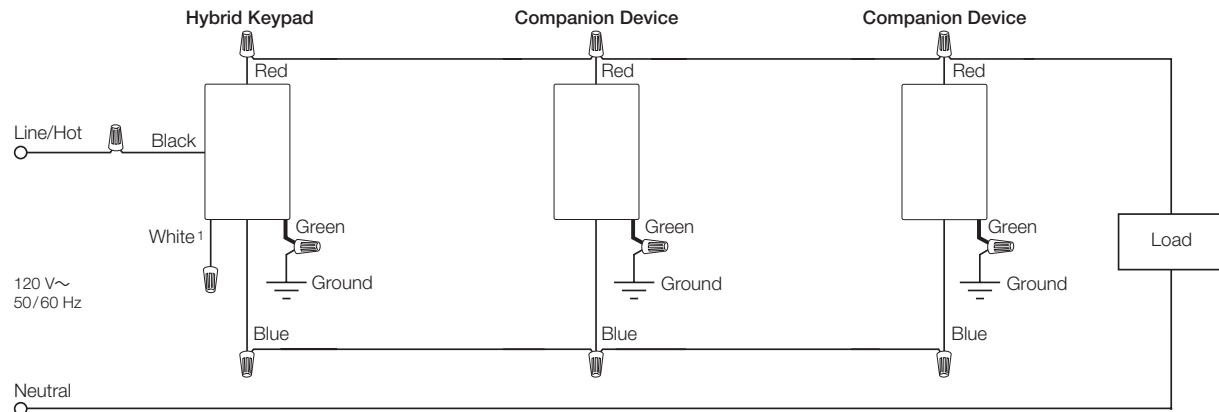
GRAFIK T RF C•L Hybrid Keypads

Wiring Diagrams *(continued)*

Wiring Diagram 3

Multi-Location Installation without Neutral^{1,2,3} - Keypad Line Side

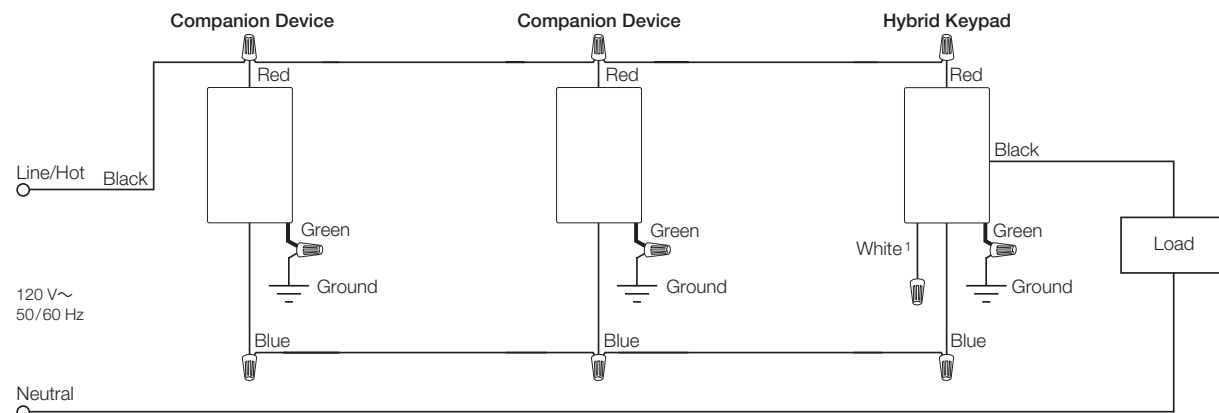
RRT-GH2B, RRT-GH4B, RRT-GH5B, or RRT-GH6B with RT-GRDW



Wiring Diagram 4

Multi-Location Installation without Neutral^{1,2,3} - Keypad Load Side

RRT-GH2B, RRT-GH4B, RRT-GH5B, or RRT-GH6B with RT-GRDW



1 When neutral wire connection is unavailable, cap the white wire. **Do not** connect the white wire to any other wiring or to ground.

2 Up to 4 companion devices may be connected to the dimmer. Total blue traveler wire length may be up to 150 ft (45 m).

3 Dimmers may be connected on the Line side or Load side of a multi-location installation if neutral is not connected. The hybrid keypad cannot be installed in the middle location of a 4-way installation.

Continued on next page...

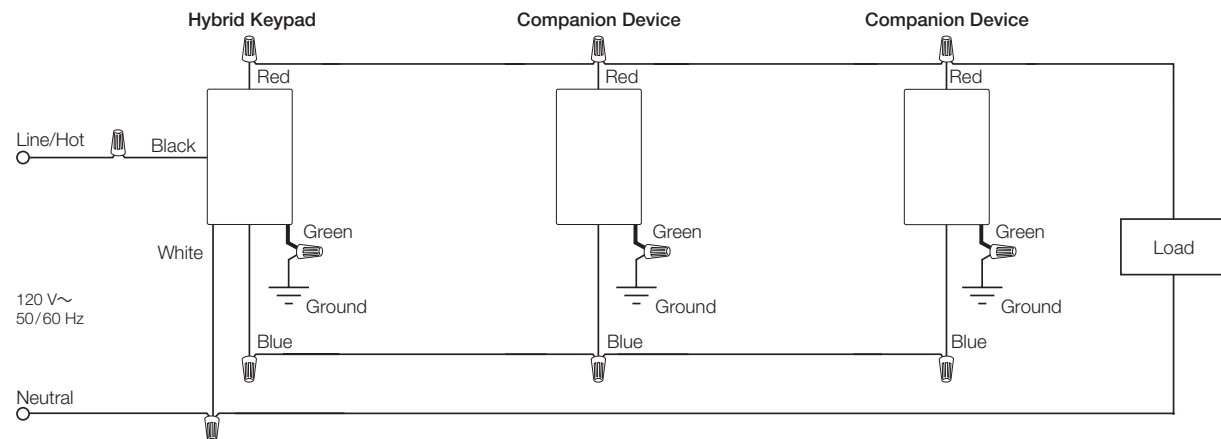
GRAFIK T RF C•L Hybrid Keypads

Wiring Diagrams (continued)

Wiring Diagram 5

Multi-Location Installation with Neutral^{1,2} - Keypad Line Side

RRT-GH2B, RRT-GH4B, RRT-GH5B, or RRT-GH6B with RT-GRDW



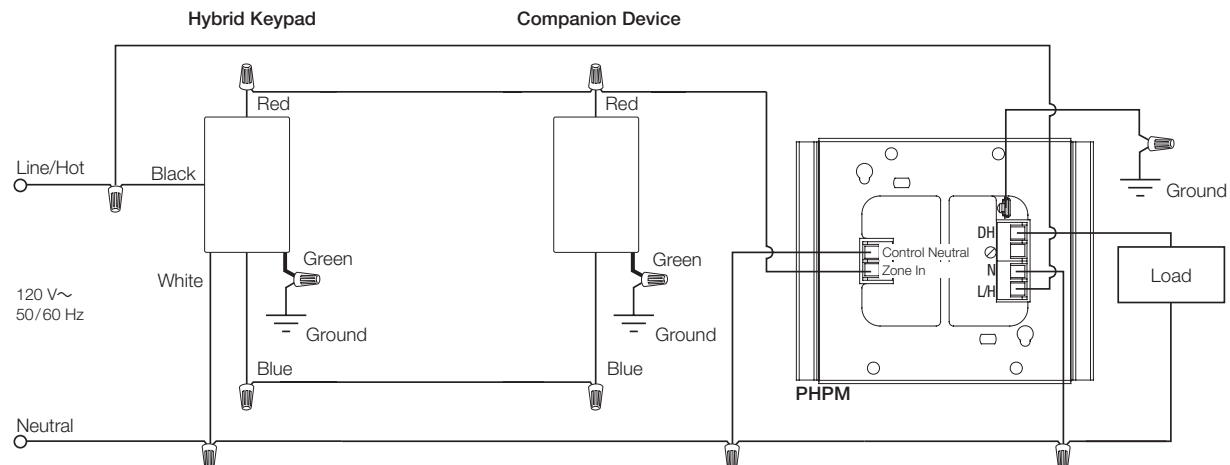
¹ Up to 4 companion devices may be connected to each hybrid keypad. Total blue traveler wire length may be up to 150 ft (45 m).

² Control must be installed on line side of circuit if using neutral wire.

Wiring Diagram 6

Multi-Location Installation with PHPM - Neutral Required

RRT-GH2B, RRT-GH4B, RRT-GH5B, or RRT-GH6B with RT-GRDW



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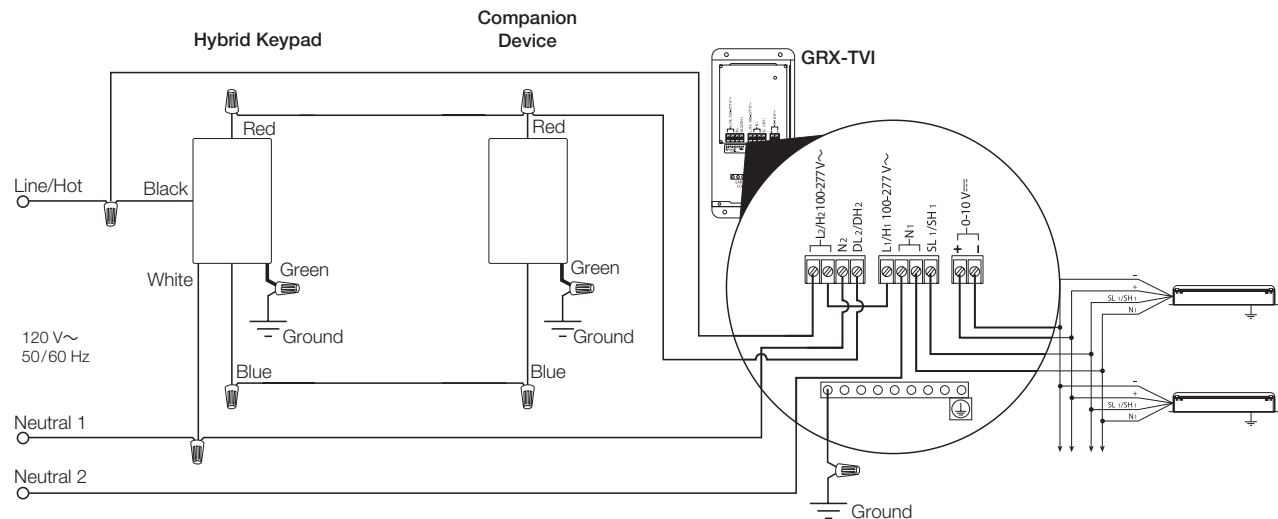
GRAFIK T RF C•L Hybrid Keypads

Wiring Diagrams (continued)

Wiring Diagram 7

Multi-Location Installation with GRX-TVI - Neutral Required

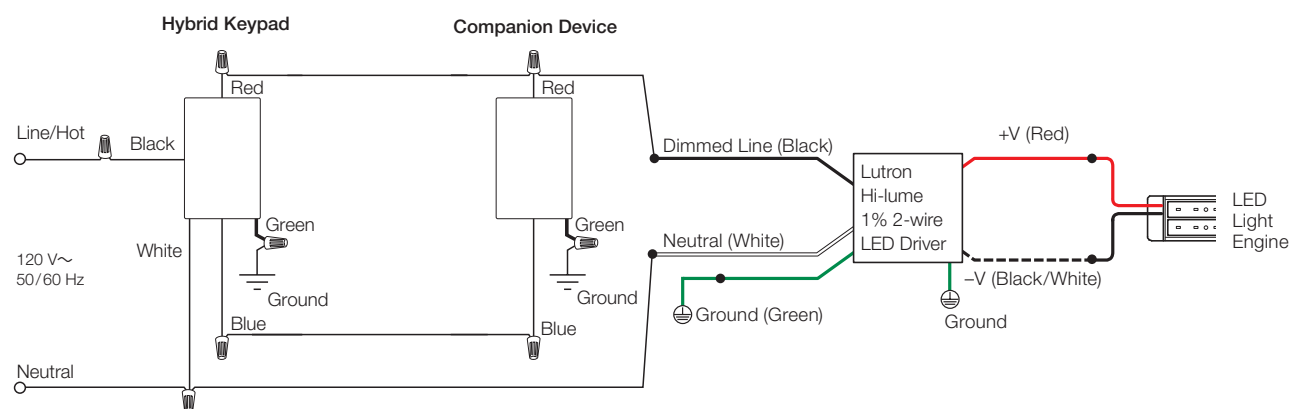
RRT-GH2B, RRT-GH4B, RRT-GH5B, or RRT-GH6B with RT-GRDW



Wiring Diagram 8

Multi-Location Installation with Hi-lume 1% 2-wire LED Driver with Neutral

RRT-GH2B, RRT-GH4B, RRT-GH5B, or RRT-GH6B with RT-GRDW



Continued on next page...

GRAFIK T RF C•L Hybrid Keypads

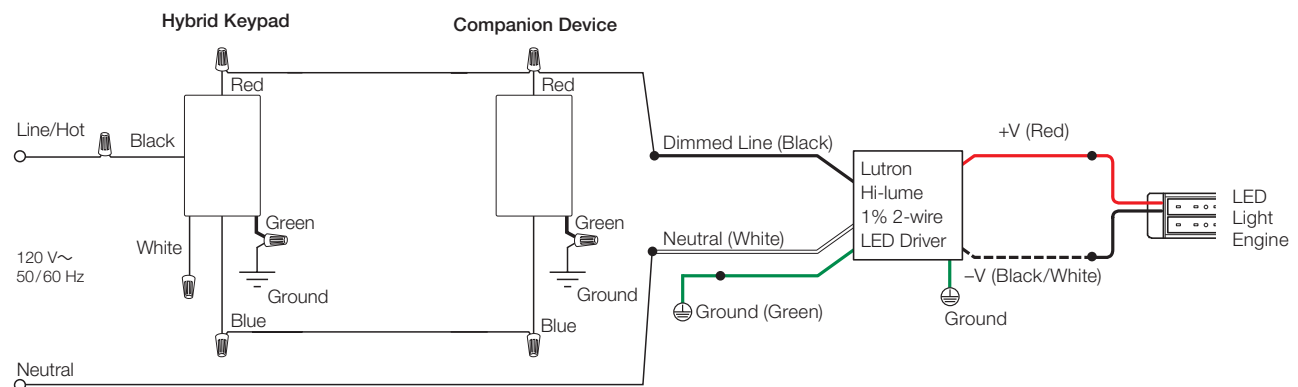
Wiring Diagrams (continued)

Wiring Diagram 9

Multi-Location Installation with Hi-lume 1% 2-wire LED Driver without Neutral - Keypad

Line Side

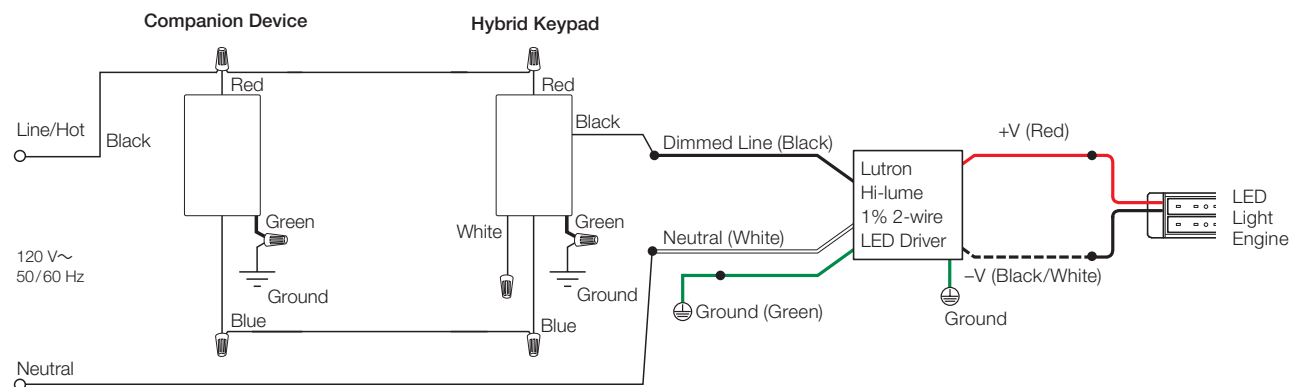
RRT-GH2B, RRT-GH4B, RRT-GH5B, or RRT-GH6B with RT-GRDW



Wiring Diagram 10

Multi-Location Installation with Hi-Lume LED Driver without Neutral - Keypad Load Side

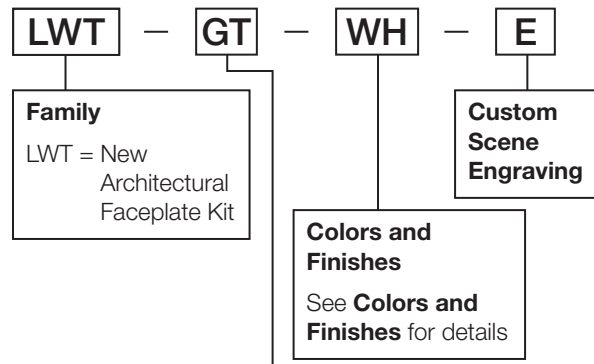
RRT-GH2B, RRT-GH4B, RRT-GH5B, or RRT-GH6B with RT-GRDW



GRAFIK T RF C•L Hybrid Keypads

How to Build a Faceplate Kit Model Number

Ganging with GRAFIK T controls.



Gangs and Openings

G = GRAFIK T™ opening 1,3,4

T = New Architectural opening²

Note: New Architectural ("T") openings are not compatible with designer products.

Available Combinations

1-Gang	2-Gang	3-Gang	4-Gang
G	GG	GGG	GGGG
	GT	GGT	GGGT
	TG	GTT	GGTT
		TGG	GTTT
		TTG	TGGG
			TTGG
			TTTG

Colors and Finishes

Architectural Matte Finishes

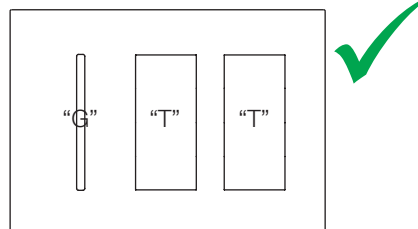
	Almond AL
	Beige BE
	Black BL
	Brown BR
	Gray GR
	Ivory IV
	Light Almond LA
	Sienna SI
	Taupe TP
	White WH

Architectural Glass Finish (faceplate only)

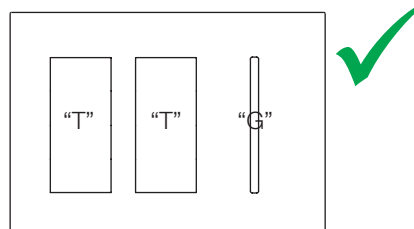
	Clear White Glass CWH
	Clear Black Glass CBL

- Due to printing limitations, colors and finishes shown cannot be guaranteed to perfectly match actual product colors.
- Color chip keychains are available for more precise color matching:
 - Architectural Matte Finishes: AM-CK-1

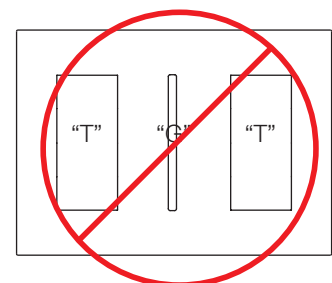
Correct (LWT-GTT-XXX-E⁵)



Correct (LWT-TTG-XXX-E⁵)



Incorrect



¹ GRAFIK T controls will only fit into "G" openings.

² New Architectural accessories will fit into "T" openings when ganging with GRAFIK T controls.

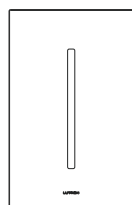
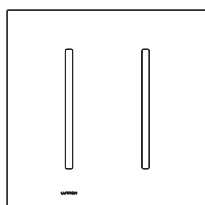
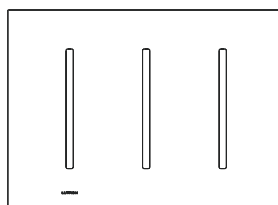
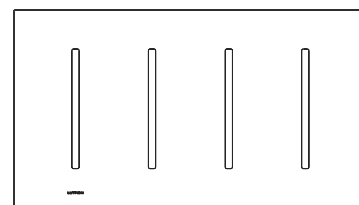
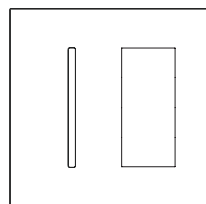
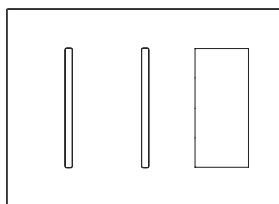
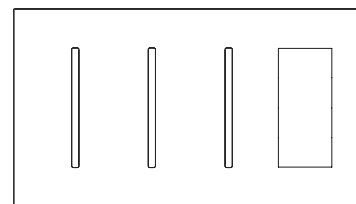
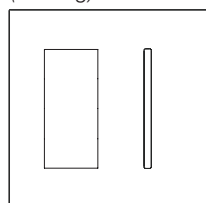
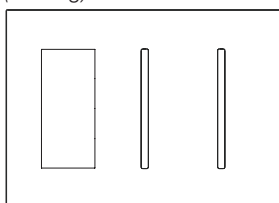
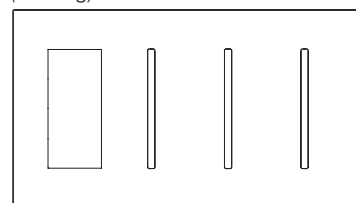
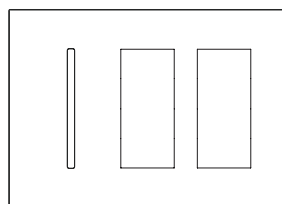
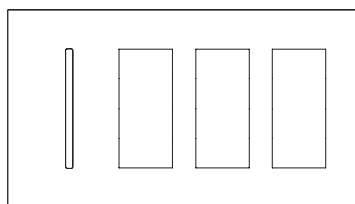
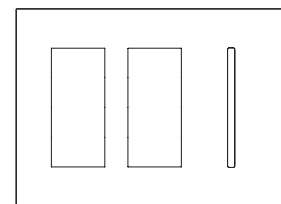
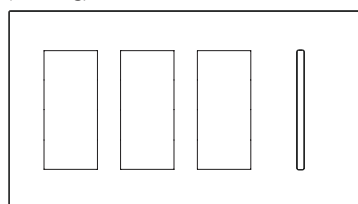
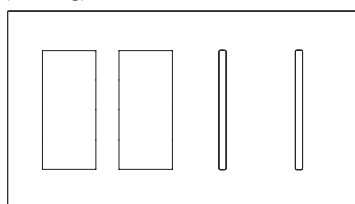
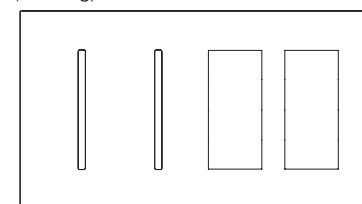
³ GRAFIK T controls cannot be ganged with Verti controls or wallplates.

⁴ GRAFIK T controls cannot be ganged with Palladiom controls ("P" openings)

⁵ "XXX" in the model number represents color/finish code. See **Colors and Finishes** on page 13 for details.

GRAFIK T RF C•L Hybrid Keypads

GRAFIK T Wallplates

LWT-G-XXX-E^{1,2}
(1 Gang)LWT-GG-XXX-E^{1,2}
(2 Gang)LWT-GGG-XXX-E^{1,2}
(3 Gang)LWT-GGGG-XXX-E^{1,2}
(4 Gang)LWT-GT-XXX-E^{1,2}
(2 Gang)LWT-GGT-XXX-E^{1,2}
(3 Gang)LWT-GGGT-XXX-E^{1,2}
(4 Gang)LWT-TG-XXX-E^{1,2}
(2 Gang)LWT-TGG-XXX-E^{1,2}
(3 Gang)LWT-TGGG-XXX-E^{1,2}
(4 Gang)LWT-GTT-XXX-E^{1,2}
(3 Gang)LWT-GTTT-XXX-E^{1,2}
(4 Gang)LWT-TTG-XXX-E^{1,2}
(3 Gang)LWT-TTTG-XXX-E^{1,2}
(4 Gang)LWT-TTGG-XXX-E^{1,2}
(4 Gang)LWT-GGTT-XXX-E^{1,2}
(4 Gang)¹ "XXX" in the model number represents color/finish code. See **Colors and Finishes** on page 13 for details.² "E" in the model number represents custom engraving on the faceplate and is defined and ordered using the RadioRA 2 GUI software.

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FASS and GRAFIK T are trademarks of Lutron Electronics Co., Inc.

Mark X is a registered trademark of Philips Electronics North America Corporation

POWERSENSE is a trademark of Community Light & Sound, Inc.

UL is a trademark of UL LLC.