



030-744  
English

### Incandescent/Halogen Dimmer

**TM-500 (Dimmer)** 220-240VAC, 50/60Hz  
**TIR-500 (Dimmer with IR Receiver)** 220-240VAC, 50/60Hz  
 40-500W incandescent/halogen lamps only

**Note:** Do not use with magnetic low-voltage (conventional) transformers.

### Electronic Low-Voltage/Incandescent Dimmer

**TM-ELV500 (Dimmer)** 220-240VAC, 50/60Hz  
**TIR-ELV500 (Dimmer with IR Receiver)** 220-240VAC, 50/60Hz  
 40-500W compatible electronic low-voltage load  
 40-400W incandescent or mixed incandescent/compatible electronic low-voltage load

**Note:** See an up to date list of compatible transformers on our web site at [www.lutron.com/telume/elv](http://www.lutron.com/telume/elv).

### Accessory Dimmer (Extension Unit)

**TAD** 220-240VAC, 50/60Hz  
 Compatible with all Telume Dimmers and Controls.

## Important Notes

Please read before installing.

- Warning:** Do not use with magnetic low-voltage (conventional) transformers.
- Caution:** To avoid overheating and possible damage to other equipment, do not use to control receptacles, fluorescent lighting fixtures, motor-operated or transformer-supplied appliances.
- Do not use to control Power Booster. Use only Telume Power Booster/Interface Control (TM-PB/TIR-PB).
- Turn power OFF at MCB (circuit breaker) before performing any routine maintenance or servicing of lighting circuit.
- Install in accordance with all national and local electrical codes.
- This Dimmer complies with IEC and EN 60669-2-1.
- Do not paint Dimmers (TM-/TIR-) or Accessory Dimmers (TAD).
- This Dimmer is not compatible with standard 2-way switches. For multi-location applications use only one Dimmer with up to 9 Accessory Dimmers.
- Accessory Dimmer can not be used individually but must be used in conjunction with a Dimmer in a 2-way/3-way application.
- Dimmer requires a minimum total lamp wattage of 40 Watts/VA. Do not exceed the maximum rating of the Dimmer (see Derating Chart).
- This Dimmer is overload protected. If the rated wattage is exceeded, power to the circuit will shut off until the Dimmer cools. If this occurs, reduce the wattage connected to the Dimmer.
- Operate between 0°C and 40°C.
- It is normal for the Dimmer to feel warm to the touch during operation.
- Recommended backbox depth is 35 mm. Minimum backbox depth is 25 mm.
- Maximum wire length between the Dimmer and the furthest Accessory Dimmer (TAD) is 50 metres.
- To ensure the best performance, the mains shall be free of noise; in particular, peak voltages exceeding 425V, and other high frequency noises.
- A separate neutral connection from the load directly back to the breaker panel is required for best performance.
- Clean with a **soft damp cloth only**. DO NOT use any chemical cleaners.

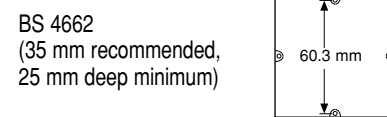
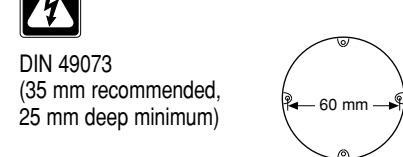
### Electronic Low-Voltage

- Use fully loaded electronic low-voltage transformers for best performance.
- Mixed incandescent and electronic low-voltage loads reduces load capacity an additional 100 Watts.
- For use with compatible electronic low-voltage loads. For an up to date list of compatible transformers, see our web site at [www.lutron.com/telume/elv](http://www.lutron.com/telume/elv).

### Backbox Information

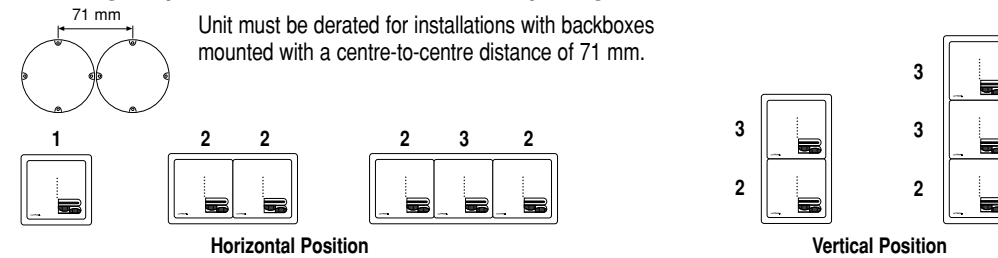
The Dimmer and Accessory Dimmers are designed to be installed into backboxes with a minimum depth of 25 mm, meeting the following requirements or equivalent.

**Note: Metal backboxes must be properly earthed (grounded).**



## Multigang Installations

### Derating Required: 71 mm centre-to-centre spacing

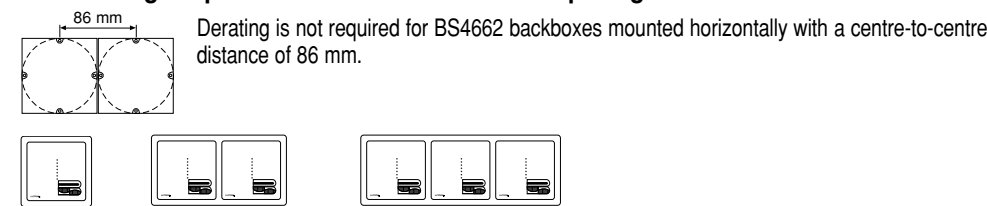


### Derating Chart

Type of Dimmer	Dimmer Position		
	1	2	3
Incandescent/Halogen	500W	400W	300W
Electronic Low-Voltage	500W	400W	300W
Accessory Dimmer	No derating required		

**Wall Type:** Reduce dimmer capacity by 20% if not used in a solid masonry wall.

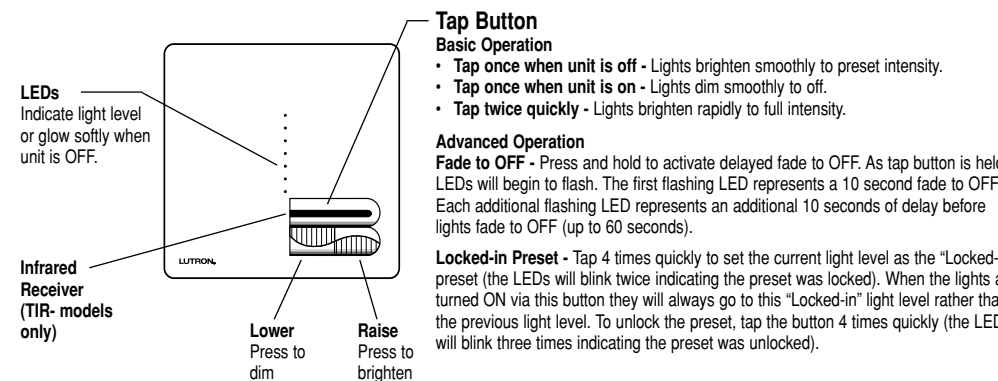
### No Derating Required: 86 mm centre-to-centre spacing



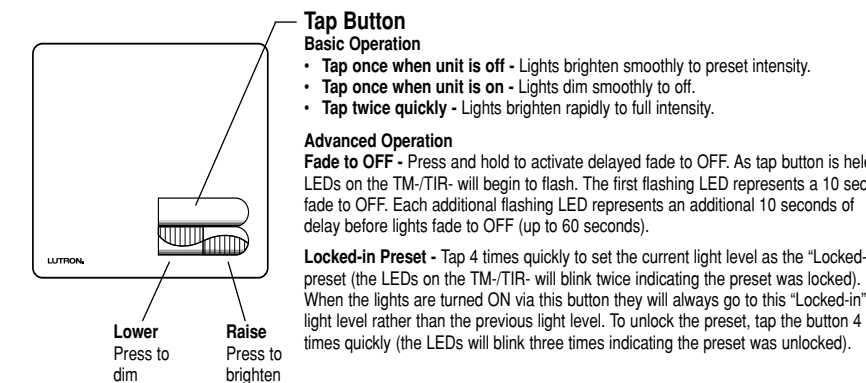
## Operation

### Models: TM-500, TM-ELV500 TIR-500, TIR-ELV500

For TIR- models use Lutron infrared hand-held remote controls for programming and recalling lighting scenes, remote dimming, and switching from the palm of your hand.



### Model: TAD



## Troubleshooting

**Note:** Turn power OFF at MCB (circuit breaker) before attempting to correct any wiring problems.

Symptom	Possible Cause
Light does not turn on or no LEDs turn on.	<ul style="list-style-type: none"> <li>Lamps burned out or not installed.</li> <li>Low-voltage transformers are not installed.</li> <li>MCB (circuit breaker) is off or tripped.</li> <li>Dimmer does not have the recommended minimum load.</li> <li>Wires between dimmed live (L) and terminal 1 are reversed.</li> <li>Front Module is not the same model as the Back Module.</li> <li>Front Module is not completely pressed into Back Module.</li> </ul>
Light turns on and Dimmer works, but Accessory Dimmer does not work.	<ul style="list-style-type: none"> <li>Terminal 1 on Dimmer is not connected to the same colour wire as the terminal 1 on Accessory Dimmer.</li> <li>Dimmer does not have the recommended minimum load.</li> </ul>
Dimmer cycles on and off.	<ul style="list-style-type: none"> <li>Dimmer has more than the rated wattage connected to it. See Important Note 11.</li> </ul>
Bulb glows softly when Dimmer is OFF.	<ul style="list-style-type: none"> <li>Dimmer does not have the required minimum load; change to a higher wattage bulb.</li> </ul>
Light does not turn on, LEDs glow dimly.	<ul style="list-style-type: none"> <li>Terminal 1 is miswired to neutral wire or touching earth.</li> </ul>
LEDs on Dimmer start to flash until top LED flashes, light level does not change.	<ul style="list-style-type: none"> <li>Wires are shorted between dimmed live (L) and terminal 1.</li> <li>Wires are shorted between live and terminal 1.</li> </ul>
<b>For IR Dimmers Only</b>	
Dimmer does not respond to the Infrared Hand-held Remote Control (transmitter).	<ul style="list-style-type: none"> <li>Transmitter batteries are installed incorrectly.</li> <li>Transmitter batteries are weak.</li> <li>Transmitter is not aimed at the Dimmer.</li> <li>Transmitter is not a Lutron Transmitter.</li> <li>Dimmer is not a Telume TIR- model dimmer.</li> </ul>
Dimmer does not respond to a non-Lutron infrared remote control (transmitter).	<ul style="list-style-type: none"> <li>Transmitter is not a programmable type transmitter (i.e. learnable or stored code).</li> <li>Transmitter was not programmed properly.</li> </ul>

## Technical Assistance

If you have questions concerning the installation or operation of this product, call **Lutron's European Headquarters**. Please provide exact model number when calling.

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## Limited Warranty

Lutron EA Ltd. ("Lutron EA") warrants each unit to be free from defects in material and workmanship and to perform under normal use and service. To the extent permitted by law, Lutron EA and Lutron Electronics Co. Inc. ("Lutron") make no warranties or representations as to the units except as set forth herein. This warranty shall run for a period of one year from the date of purchase and Lutron's obligations under this warranty are limited to remedying any defect, replacing any defective part or replacement (at Lutron EA's sole option) and shall be effective only if the defective unit is shipped to Lutron EA postage prepaid within 12 months after purchase of the unit. Repair or replacement of the unit does not affect the expiry date of the warranty. This warranty does not cover damage or deficiencies due to abuse, misuse, inadequate wiring or insulation or use or installation other than in accordance with instructions accompanying the unit.

To the extent permitted by law, neither Lutron EA nor Lutron shall be liable for any other loss or damage including consequential or special loss or damages, loss of profits, loss of income, or loss of contracts arising out of or relating to the supply of the unit or the use of the unit and the purchaser assumes and will hold harmless Lutron EA and Lutron in respect of all such loss or damage. Nothing in this warranty shall have the effect of limiting or excluding Lutron EA's or Lutron's liability for fraud or for death or personal injury resulting from its own negligence, or any other liability, if and to the extent that the same may not be limited or excluded as a matter of law.

**This warranty does not affect the statutory rights of consumer purchasers of this product.**

Although every attempt is made to ensure that catalogue information is accurate and up-to-date, please check with Lutron EA before specifying or purchasing this equipment to confirm availability, exact specifications, and suitability for your application.

This product is covered under one or more of the following patents and design registrations.

In the United States: 4,797,599; 4,835,343; 5,248,919; 5,399,940; 5,909,087; 6,169,377; DES 310,349; DES 317,593; DES 370,663; DES 391,924; DES 412,491; DES 421,246; DES 437,834; DES 442,558.

In the United Kingdom: 2,059,205; 2,075,823; 2,078,420; 2,083,226; 2,083,227; 2,083,228; 2,083,229; 2,083,230; 2,083,231; 2,083,232; 2,083,233; 2,083,234; 2,083,235.

In Germany: M 96 08 101.5; 4 98 06 781.5; 4 99 04 738.9; 386 5891.

In France: 97/12; 98 4380; 99 2964; 0293569.

In Italy: MI98000490; MI99000276; 0293569.

In Hong Kong: 01108554.0

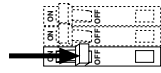
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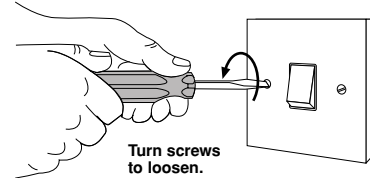
## Installation

For installations involving more than one control in a backbox, refer to Multigang Installations before beginning.

- 1** **WARNING:** Turn power OFF at MCB (circuit breaker) or remove fuse.

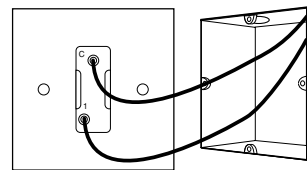


- 2** Remove switch mounting screws. Remove switch from wall.



- 3** Identify type of circuit:

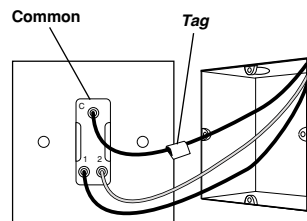
### Single-Location control



#### One switch controlling a light fixture.

This switch will be a 1-way. The switch will have insulated wires connected to two terminals.

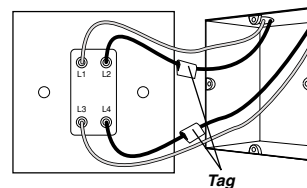
### Two-Location control



#### Two switches controlling a light fixture.

Both switches will be 2-way. Each switch will have insulated wires connected to three terminals. One of these wires is connected to a terminal labeled C or COMMON. **TAG** this wire on both switches to identify when wiring.

### Three-Location control



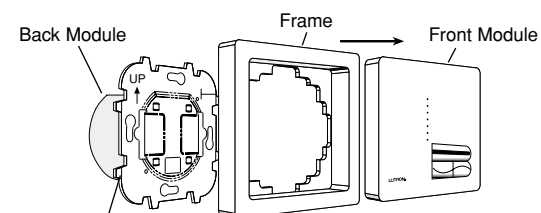
#### Three switches controlling a light fixture.

Two switches will be 2-way and one will be a 3-way. **Tag** the two 2-way switches as in the Two-Location diagram above. The 3-way switch will have insulated wires connected to four terminals. **TAG** the two same colour insulated wires which are connected to opposite sides of the switch.

**Note:** Terminal placement may be different on your switch.

- 4** Disconnect switch wires.

- 5** Remove Control Module from Dimmer.

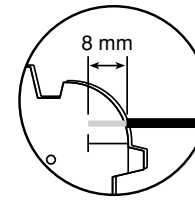


Pull Front Module and frame straight off to remove it from the Back Module. **Note:** Some force may be required for removal. (TIR- model shown.)

**Note:** Use diagonal cutters to remove tabs if required when ganging with non-Lutron products.

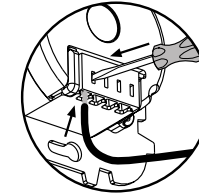
## Important Wiring Information

Trim or strip backbox wires to 8 mm as indicated by the strip gauge on the front of the dimmer. When connecting the dimmer, insert wires fully into the backwire holes.



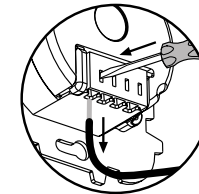
### To Insert Wire:

Backwire holes are for use with a minimum of 1.0 mm<sup>2</sup> to a maximum of 2.5 mm<sup>2</sup> solid or stranded copper wire. When using stranded wire, twist wire firmly before inserting. **NOTE:** Use a screwdriver to press on the release tab to aid in stranded wire insertion.



### To remove wire:

Insert screwdriver, pull wire out.



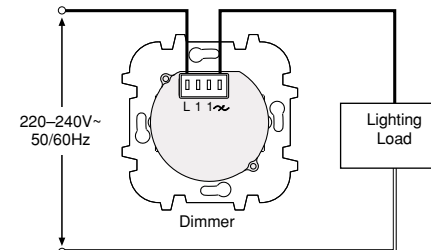
- 6** Wiring the controls.

**Note:** Neither the Dimmer nor the Accessory Dimmer requires an earth wire. Follow your local and national wiring codes to terminate the earth wire in your backbox.

### Single-Location control

#### Wiring the Dimmer:

- Connect either of the wires removed from the switch to terminal L.
- Connect the other wire removed from the switch to the  $\sim$  terminal.



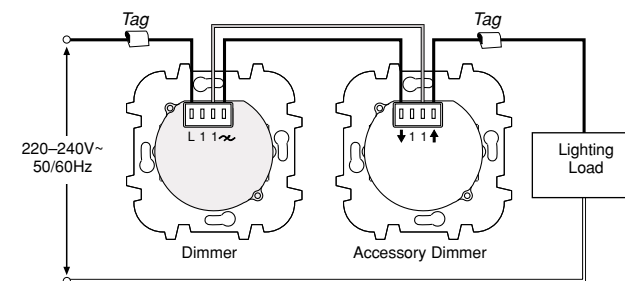
### Two-Location control

#### A. Wiring the Dimmer:

- Connect the tagged wire removed from the switch to terminal L.
- Connect either of the remaining wires removed from the switch to the  $\sim$  terminal.
- Connect the remaining wire removed from the switch (note wire colour) to either terminal 1.

#### B. Wiring the Accessory Dimmer (TAD):

- Connect the tagged wire removed from the switch to the  $\uparrow$  terminal.
- Connect the same colour wire noted in Step A, to either terminal 1.
- Connect the remaining wire removed from the switch to the  $\downarrow$  terminal.



**NOTE:** Dimmer can replace a 2-way switch from the line or load side.

## Three-Location control or more

### A. Wiring to replace the 3-way intermediate switch(es)

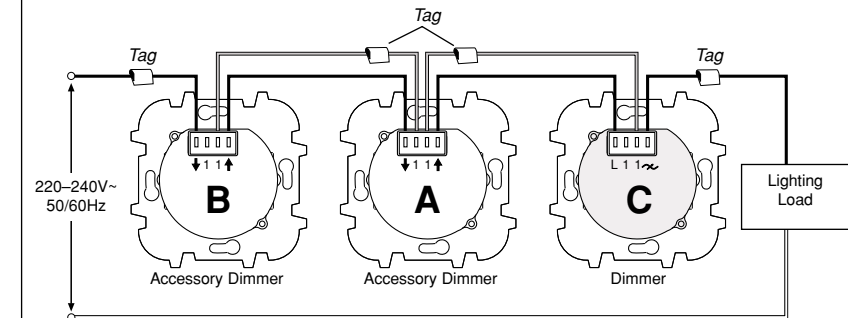
- Connect both of the tagged wires (noting their colour) removed from the 3-way switch to terminal 1.
- Connect one of the remaining wires removed from the switch to the  $\downarrow$  terminal.
- Connect the remaining wire removed from the switch to the  $\uparrow$  terminal.

### B. Wiring to replace a 2-way switch

- Connect the tagged wire removed from the switch to the  $\downarrow$  terminal.
- Connect the same colour wire as the terminal 1 wire from Step A, to either terminal 1.
- Connect the remaining wire removed from the switch to the  $\uparrow$  terminal.

### C. Wiring to replace the second 2-way switch

- Connect the tagged wire removed from the switch to the  $\sim$  terminal.
- Connect the same colour wire as the terminal 1 wire from Step A, to either terminal 1.
- Connect the remaining wire removed from the switch to the L terminal.

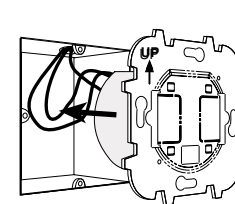


**NOTES:**

- Dimmer can replace any switch in the circuit.
- Connect up to a total of 9 Accessory Dimmers

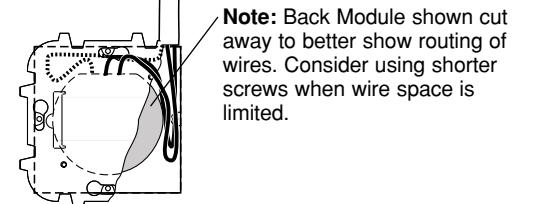
- 7** Mount and align Dimmer (and Accessory Dimmers). Attach frame and Front Module to Back Module.

- 7a** Arrange wires to the sides of Back Module when inserting into backbox. **Caution - Do not pinch wires.**



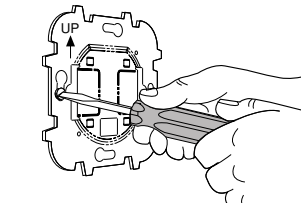
**Note:** Dimmer may mount with terminal block facing down. Ensure arrow on front of Back Module is facing UP when mounting.

**Recommended wire routing for 25 mm deep backbox.**

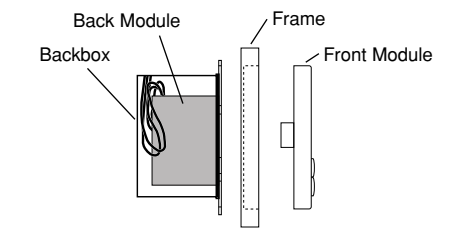


**Note:** Back Module shown cut away to better show routing of wires. Consider using shorter screws when wire space is limited.

- 7b** Secure back Module to backbox. **Caution - Do not overtighten mounting screws.**



- 7c** Attach frame and Front Module to Back Module.



- 8** Turn power ON at MCB (circuit breaker) or replace fuse.

