



Installation Instructions
Please Leave for Occupant

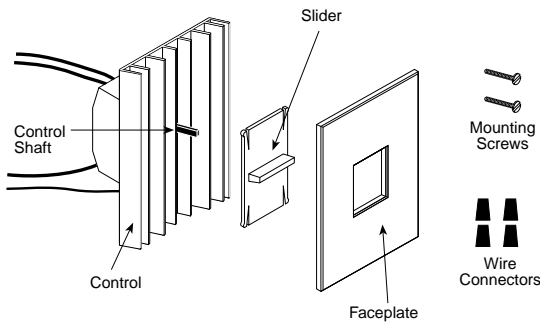
Low Voltage Dimmers

NLV-600, NLV-1000, NLV-1500
 120VAC, 60Hz

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Package Contents:



Important Notes
Please Read Before Installation

Transformer Information: Use with core and coil (magnetic) low-voltage transformers **only**. For more information, call the toll-free **Lutron Technical Assistance Hotline** for Application Note 19, "Guide to Dimming Low-Voltage Lighting".

Caution: Operation of a dimmer low voltage circuit with all lamps inoperative or removed may result in current flow in excess of normal levels. To avoid possible transformer overheating and premature transformer failure, Lutron strongly recommends the following:

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

Lamp Type: Use incandescent low-voltage lamps in combination with a low-voltage transformer or 120V incandescent lamps.

Caution: To avoid overheating and possible damage to other equipment, do not install to control receptacles, fluorescent lighting fixtures, motor-operated appliances, or transformer supplied appliances.

Multi-phase Applications: In multi-phase applications, use a separate neutral for each phase containing a dimming circuit. For more information, call the toll-free **Lutron Technical Assistance Hotline** for Application Note 17, "Common Neutral Interaction".

Short Circuit Check: Check new installation for short circuits prior to installation. With power OFF, use a single pole switch and connect appropriate wires to hot wire and lamp. Turn power ON. If lights do not work or breaker trips, a short is present. Correct wiring and check circuit again. Install dimmer only when short is no longer present.

Wire Connectors: Wire connectors provided can be used to join one 10-, 12-, 14-, 16-, or 18-gauge wire with one or two 12- or 14-gauge wires. Use them with copper wire **only**.

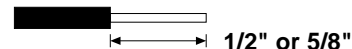
Switchbox Location: A single-gang switchbox (3" high x 2" wide x 2 1/2" deep) will service all individual Nova dimmers. Allow a minimum space of 4 1/2" above and below the dimmers for proper heat dissipation. These dimmers are designed for use where ambient temperature is between 0°C to 40°C (32°F to 104°F).

Multigang Installations: Lutron offers a multigang faceplate to simplify and improve the appearance of your installation. A multigang mounting frame is provided with each standard faceplate to ensure proper alignment of the dimmers, easy application of the faceplate, and a flat surface.

Faceplate Cleaning: For best results, use mild cleaner and damp cloth. Do **not** use ammonia-based cleaner.

Single Unit Installation

1. Turn power OFF at fusebox or circuit breaker. Wiring with power on can result in personal injury. Damage to product caused by wiring with power on voids warranty.
2. Remove faceplate from dimmer to prevent damage and to access mounting holes. Pull out at top and bottom edges, plate will snap off.
3. Strip insulation from dimmer wires and from wires to which dimmer is to be connected as follows:
 - 1/2" for 10, 12, and 14 gauge wire
 - 5/8" for 16 and 18 gauge wire



This product is covered by one or more of the following U.S. patents: 4,876,498; 4,954,768 and corresponding foreign patents. U.S. and foreign patents pending. Lutron and Nova are registered trademarks.
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- 4.** Use wire connectors provided to make the following connections:
- Green or bare ground wire to ground in the wallbox. **Note:** If a bare copper or green ground wire is not in the wallbox, contact a licensed electrician.
 - Black control lead to 120VAC lead.
 - Yellow lead to one transformer primary lead.
 - White lead to neutral, along with the other transformer primary lead. See figures A and B. Be sure copper conductor is not exposed.

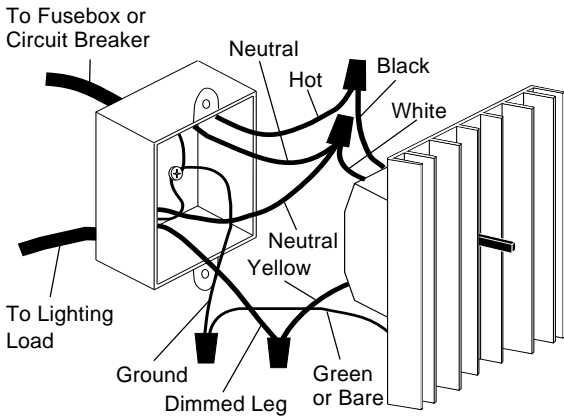


Figure A. Switchbox Wiring

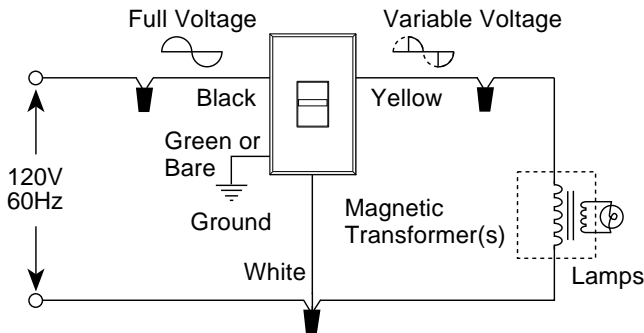


Figure B. Wiring Diagram

- 5.** Carefully push wires into switchbox allowing room for dimmer backbox.
- 6.** Mount dimmer to switchbox using two screws provided and center mounting holes. See Figure C. Unit *must* be mounted vertically.

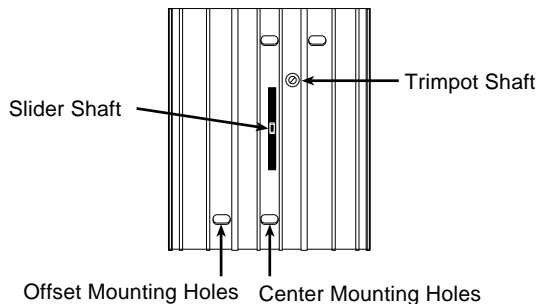


Figure C. Front View-Single Unit Installation

- 7.** Turn power ON. Slide shaft up to increase light intensity, down to decrease light intensity and turn OFF.
- 8.** Minimum light intensity is preset. To adjust, use the screwdriver provided to turn the triprot screw (inside triprot shaft) clockwise to increase light level and counterclockwise to decrease light level.
- 9.** Install slider on shaft. Replace faceplate by firmly pressing at top, center, and bottom to snap tabs into place. See Figure D.

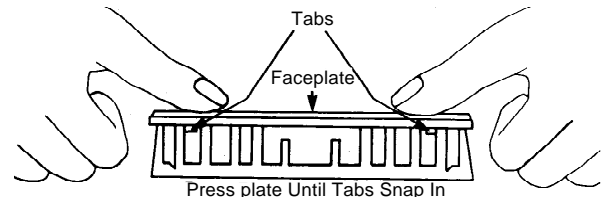


Figure D. Snap on Faceplate

Multigang Installation- No Side Sections Removed (No Derating Required)

In multigang installations several dimmers or controls are grouped horizontally in one ganging switchbox or in a series of interconnected switchboxes. Lutron offers multigang faceplates to simplify and improve the appearance of these installations. A multigang mounting frame is provided with each standard multigang faceplate to ensure proper alignment of dimmers, easy application of the faceplate, and a flat surface for the installation. Refer to multigang instruction sheet supplied with multigang faceplate.

Installation of dimmers without removing side sections allows operation at full capacity (i.e., no derating is required). Follow instructions below. For retrofit installations, side sections can be removed to fit existing switchboxes. See "Multigang Installation - Side Sections Removed" on page 3.

- 1.** Determine the number of switchboxes necessary by using the Switchbox Requirement Chart (Table A). When ganging any combination of small dimmers (NLV-600) and large dimmers (NLV-1000 and NLV-1500), place all small dimmers at one end of the gang and all large dimmers at the other.

**Table A. Switchbox Requirement Chart
No Side Sections Removed**

	Number of Small Controls						
	0	1	2	3	4	5	6
Number of Large Controls	0	1	1+1*	4	4+1*	7	1+7*
1	1	3	5	6	8	9	11
2	4	6	7	9	10	12	13
3	6	8	10	11	13	14	16
4	9	11	12	14	15	17	18

*See item #2

2. When ganging an even number of *small* dimmers use gangable 3" x 2" switchboxes. Do not use plaster rings or gangbox covers. You need one switchbox in addition to the total number of controls in order to provide space for faceplates (e.g. 4 dimmers require 5 switchboxes). Place additional switchboxes $\frac{3}{4}$ " apart from other switchbox(es) to provide space for faceplate(s). See Figure E.

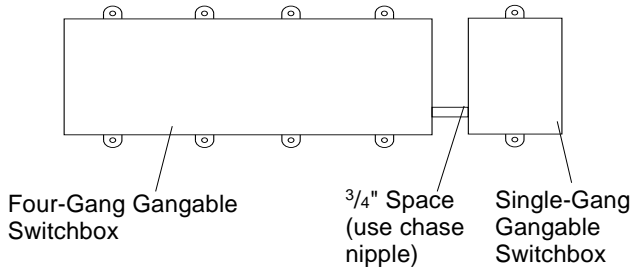


Figure E. Switchbox Positioning Four-Gang Controls

3. Turn power OFF.

4. Wire each dimmer according to step 1-4 in "Single Unit Installation" on page 1.

5. Install dimmers in switchbox(es) using screws provided. Begin with small dimmers and use center mounting holes. Then use offset mounting holes as required for proper alignment. Allow $\frac{1}{32}$ " between dimmers for ease in attaching faceplate. See Figure F.

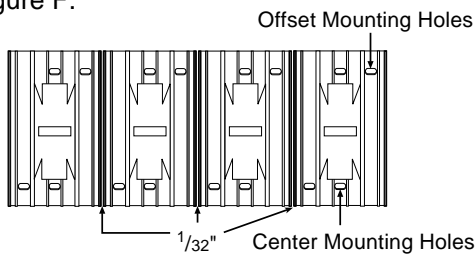


Figure F. Front View - Four-Gang Installation

6. Turn power on. Slide shaft up to increase light intensity, down to decrease light intensity and turn off.

7. Minimum light intensity is preset. To adjust, use the screwdriver provided to turn the trimpot screw (located in trimpot shaft) clockwise to increase light level and counterclockwise to decrease light level.

8. Install slider on shaft. Snap on faceplate by pressing firmly at top, center, and bottom to snap tabs into place. Adjust up or down for a snug fit. Figure G is an example of a multigang unit with a multigang faceplate.

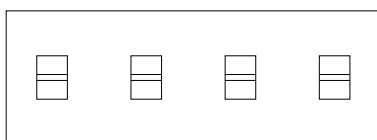


Figure G. Multigang Unit With Faceplate

Multigang Installation-- Side Sections Removed (Derating Required)

In multigang installations several dimmers or controls are grouped horizontally in one ganging switchbox or in a series of connected switchboxes. Lutron offers multigang faceplates to simplify and improve the appearance of this installation. A multigang mounting frame is provided with each standard multigang faceplate to ensure proper alignment of dimmers, easy application of faceplate, and a flat surface for the installation. Refer to multigang instruction sheet supplied with multigang faceplate.

1. Derating is required when side sections are removed. Ensure safe operation by using derating chart (Table B) to determine maximum possible load when side sections are removed. Match dimmer size and number of side sections removed with maximum safe load size.

Table B. Derating Chart-Maximum Amperage Load

	NLV-600	NLV-1000	NLV-1500
Max. VA (Amps)	600 (5)	1000 (8.3)	1500 (12.5)
Max. VA (Amps) one side off	600 (5)	900 (7.5)	1250 (10.4)
Max. VA (Amps) two sides off	500 (4.2)	700 (5.8)	1000 (8.3)

When VA load on dimmer is unknown, use chart in Table C to determine correct dimmer loading and derating according to wattage.

Table C. Derating Chart-Maximum Lamp Wattage

	NLV-600	NLV-1000	NLV-1500
Max. lamp wattage	500	800	1250
Max. wattage one side off	500	750	1000
Max. wattage two sides off	400	550	800

2. Determine number of switchboxes you need by using the switchbox requirement chart (Table D). When ganging any combination of small dimmers (NLV-600) and large dimmers (NLV-1000, NLV-1500), place all small dimmers at one end of the gang and all large dimmers at the other end.

Table D. Switchbox Requirement Chart
Side Sections Removed

		Number of Small Controls						
		0	1	2	3	4	5	6
Number of Large Controls	0	0	1	2	3	4	5	6
	1	1	3	4	5	6	7	8
	2	3	5	6	7	8	9	10
	3	5	7	8	9	10	11	12
	4	7	9	10	11	12	13	14

3. Remove desired *inner* side sections of dimmers. Using pliers, bend side sections down as far as you can and then back to their original positions. See Figure H. Repeat several times and side sections will break off. Do not remove outer side sections of dimmers on ends of gang.

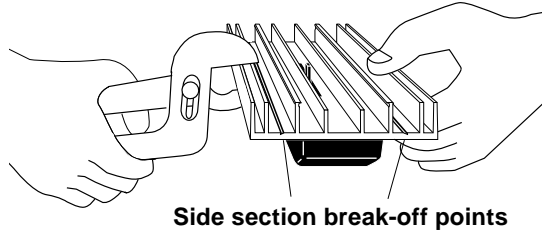


Figure G. Side Section Removal

- 4.** Turn power OFF.
- 5.** Wire each dimmer according to step 1-4 in "Single Unit Installation" on page 1.
- 6.** Install dimmers in switchbox(es) using screws provided. Begin with small dimmers and use center mounting holes. See figure I. Allow $\frac{1}{32}$ " between dimmers for ease in attaching faceplate.

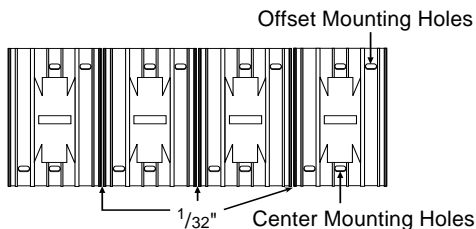


Figure I. Front View - Four-Gang Installation

- 7.** Turn power ON. Slide shaft up to increase light intensity, down to decrease light intensity and turn OFF.
- 8.** Minimum light intensity is preset. To adjust, use the screwdriver provided to turn the trimpot screw (located in trimpot shaft) clockwise to increase light level and counterclockwise to decrease light level. See Figure C.
- 9.** Install sliders on shafts. Replace faceplates by pressing firmly at top, center, and bottom to snap into place. Figure G is an example of a multigang unit and faceplate.

Cutting Faceplates When Removing Side Sections:

Some faceplates will need to be cut if removing side sections of dimmers and not using a multigang faceplate. Position faceplate on a soft cloth face down. Press firmly and score the groove on the back of faceplate with a razor-sharp knife, using vertical side groove to keep knife on straight course (see Figure H). Bend section back and forth to break it off. Smooth edges by placing fine-grained sandpaper on a flat surface and rub edge of the faceplate over the sandpaper a few times. Hold faceplate steady as you rub to keep a true edge.

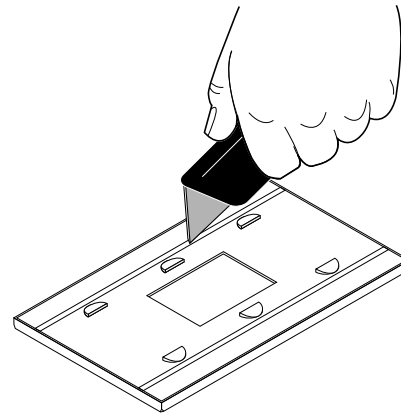


Figure H. Cutting Faceplate

Multigang faceplates, which require no cutting, are available from Lutron in a variety of colors to simplify and beautify your installation.

Worldwide Technical and Sales Assistance

If you have questions concerning the installation or operation of this product, call the **Lutron Technical Assistance Hotline**. Please provide exact model number when calling.

(800) 523-9466 (U.S.A., Canada, and the Caribbean)
 Other countries call (610) 282-3800
 Fax (610) 282-3090

Warranty

Lutron will, at its option, repair or replace any control that is defective in materials or manufacture within one year after the purchase. For warranty service, return unit to place of purchase or mail to Lutron at 7200 Suter Road, Coopersburg, PA 18036-1299, postage prepaid.

This warranty is in lieu of all other warranties, express or implied, and the implied warranty of merchantability is limited to one year from purchase. This warranty does not cover the cost of installation, removal, or reinstallation, or damage resulting from misuse, abuse, or improper wiring or installation.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty may last, so the above limitations and exclusions may not apply to you.