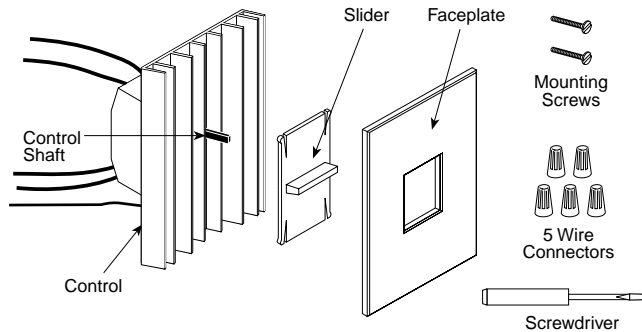


Package Contents and Part Identification



Important Notes Please Read Before Installation

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

Short Circuit Check: Check new installation for short circuits prior to installing dimmer. With POWER OFF, connect incoming neutral to the white wire, and the hot wire to both ballast input wires (black wire with brown wire or yellow/blue wire or orange wire, depending on ballast used). Turn power ON. If lights do not work, or breaker trips, a short is present. Correct the wiring and check circuit again. Install dimmer only when short is no longer present. This check should be done by a qualified electrician.

Sockets: Use only with rapid start lamp sockets. Lamp disconnect sockets may be required for use with certain manufacturer's ballasts. This is in order to meet U.L. and NEC regulations and maintains personal safety standards. Lutron does not require lamp disconnect sockets with their ballasts. Refer to the manufacturer's ballast label for this information.

Lamps: Use only rapid start fluorescent lamps. Energy Saver Lamps may NOT be used with this dimmer. **With magnetic ballasts only**, do not mix different wattage lamps in the same circuit. **NOTE:** For proper dimming performance lamps must be operated at full intensity for 100 hours prior to dimming.

Ballasts: Use ONLY dimming ballasts listed on chart in step 2 of Pre-Installation. **With magnetic ballasts only**, do not mix 1 and 2 lamp ballasts in any one dimmer circuit. Do not mix ballasts manufactured by more than one company. Using single lamp ballasts will produce the most consistent low end dimming level.

Multi-phased Applications (120/208-3 Phase): In multi-phased applications use a separate neutral for each phase containing a dimmer. Contact the **Lutron Technical Assistance Hotline** toll-free for Application Note #17, "Common Neutral Interaction".

Pre-Installation

1. Determine the number of dimmers to be ganged in the same wallbox. If installing a single dimmer in a switchbox, continue to the "Single Unit Installation" section on page 3.
2. If more than one dimmer is being ganged in the same wallbox, side sections can be removed to fit in existing switchboxes. When controlling magnetic ballasts, breaking side sections off the dimmer will reduce the maximum number of lamps per dimmer. Use the following charts to determine the maximum number of lamps per dimmer.

Figure A: Derating Ballast Chart

120V Applications

Magnetic Ballasts	Number of Side Sections Removed								
	None			One			Two		
Controls	NF-10	NF-20	NF-30	NF-10	NF-20	NF-30	NF-10	NF-20	NF-30
Ballasts	Units listed are maximum number of LAMPS per control								
<i>Universal</i>									
550LTCP†	12	24	36	9	22	34	6	19	31
502ATCP*‡	12	24	36	9	20	32	4	18	28
<i>Advance</i>									
DIM 140H	10	20	30	7	18	27	4	15	25
DIM 240H*	10	20	30	6	18	26	4	14	24
<i>Valmont</i>									
8G5001W	12	24	36	9	22	34	6	19	31
8G5007W*	12	24	36	9	20	32	4	18	28

† can be used with 30W lamps

* 2 lamp ballast

Electronic Ballasts	NF-10**	
<i>Lutron</i> Hi-lume Eco-10	16 Amps	NF-10 controls when used with Lutron electronic dimming ballasts do not require derating when side sections are removed.

** Only NF-10 may be used with Lutron Ballasts. Total Amps are determined by adding all ballast line currents as indicated on ballast label.

277V Applications

Magnetic Ballasts	Number of Side Sections Removed					
	None		One		Two	
Controls	NF-10-277	NF-20-277	NF-10-277	NF-20-277	NF-10-277	NF-20-277
Ballasts	Units listed are maximum number of LAMPS per control					
<i>Magnetek</i>						
Universal						
679LTCP	12	24	11	21	10	20
678LTCP	12	24	10	20	10	20

Electronic Ballasts	NF-10-277**	
<i>Lutron</i> Hi-lume Eco-10	8 Amps	NF-10-277 controls when used with Lutron electronic dimming ballasts do not require derating when side sections are removed.

** Only NF-10-277 may be used with Lutron Ballasts. Total Amps are determined by adding all ballast line currents as indicated on ballast label.

Multi-gang Installation

In multi-gang installations several dimmers or controls are grouped horizontally in one ganged switchbox or in a series of interconnected switchboxes. Multi-gang faceplates are available to simplify and improve the appearance of these installations. A multi-gang mounting frame is provided with each standard multi-gang faceplate to ensure proper alignment of dimmers, easy application of the faceplate, and a flat surface for the installation. This frame is most easily mounted on the wall before dimmer wires are connected. Refer to multi-gang instruction sheet supplied with multigang faceplate.

No Side Sections Removed (No Derating Required)

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 Multi-gang Installation, "Side Sections Removed" at right.

1. Assure safe operation by using Ballast Chart (Figure A) to determine maximum number of lamps safely used with specific ballast. **Note:** Use ONLY dimming ballasts listed on chart. Do not use any other ballasts.
2. Determine the number of switchboxes necessary by using Switchbox Requirement Chart in Figure B. When ganging any combination of "small" (NF-10, NF-10-277) and "large" (NF-20, NF-30, NF-20-277) dimmers, place all small dimmers at one end of the gang and all large dimmers at the other end.

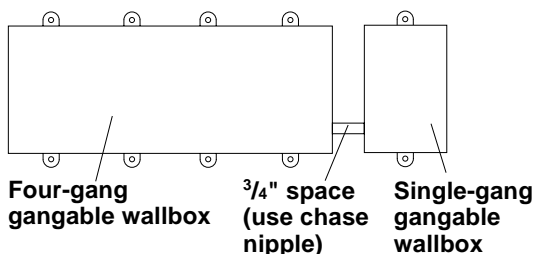
Figure B: Switchbox Requirement Chart
No Side Sections Removed

		Number of Small Controls (NF-10)						
		0	1	2	3	4	5	6
Number of Large Controls (NF-20, NF-30)	0	0	1	1+1*	4	4+1*	7	7+1*
	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 3

3. When ganging an EVEN number of SMALL dimmers, use gangable switchboxes with tapped ears as shown below. Do not use plaster rings or gangbox covers. Space an "additional" switchbox $\frac{3}{4}$ " apart from the other switchbox(es). A $\frac{3}{4}$ " chase nipple is recommended as a spacer between the switchboxes. (Example, 4 small dimmers require 5 switchboxes. See Figure C.)

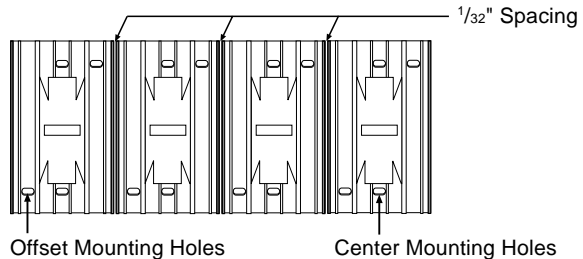
Figure C: Switchbox Positioning Four-Gang Controls



4. Wire each dimmer according to Steps in "Single Unit Installation" on page 3.

5. Install dimmers in switchbox(es). When combining small and large dimmers, place all small dimmers on one extreme end of the gang, and large dimmers at the other end of the gang. Use center and offset mounting holes as required for proper alignment. Allow $\frac{1}{32}$ " between dimmers for ease in attaching faceplate. See Figure D.

Figure D: Front View - Four-Gang Installation
No Side Sections Removed



6. Replace sliders and snap on multi-gang faceplate (or multiple single faceplates) and adjust up or down for a snug fit. Multi-gang faceplates (with mounting frames and instructions) are available in a variety of colors to beautify and simplify your installation.

Side Sections Removed (Derating Required)

1. Derating is necessary when side sections are removed. Use Derating Ballast Chart in Figure A. Match the dimmer size, number of side sections removed, and the ballast type to determine maximum safe load.
2. Determine number of switchboxes necessary by using the Switchbox Requirement Chart in Figure E. When ganging any combination of "small" dimmers (NF-10, NF-10-277) and "large" (NF-20, NF-30, NF-20-277) dimmers, place all small dimmers at one end of the gang and all large dimmers at the other end.

Figure E: Switchbox Requirement Chart
Side Sections Removed

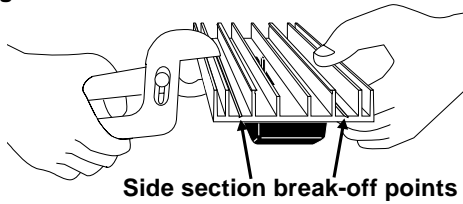
		Number of Small Controls (NF-10)						
		0	1	2	3	4	5	6
Number of Large Controls (NF-20, NF-30)	0	0	1	2	3	4	5	6
	1	1	3	4	5	6	7	8
	2	3	5	6	7	8	9	10
	3	5	7	8	9	10	11	12
	4	7	9	10	11	12	13	14

3. Remove INNER side sections only. Using pliers, bend side sections down as far as you can and then back to their original positions. Side sections will break off. See Figure E.

DO NOT REMOVE OUTER SIDE SECTIONS OF THE TWO DIMMERS WHICH ARE ON THE ENDS OF THE GANG.

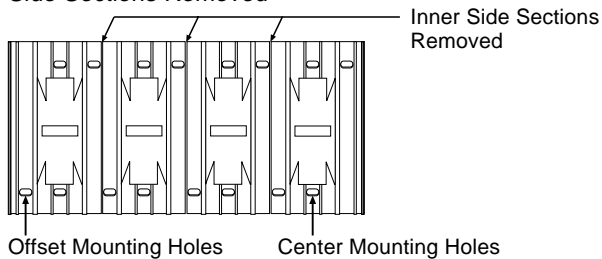
Single Unit Installation

Figure E: Side Section Removal



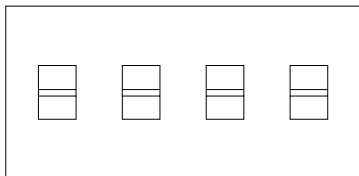
4. Wire each dimmer according to Steps in "Single Unit Installation" on page 3.
5. Install dimmers in switchbox(es). Use center mounting holes as required for first unit, then use offset mounting holes as required for proper alignment. Remember to keep all small dimmers grouped together. See Figure F.

Figure F: Front View - Four-Gang Installation Side Sections Removed



6. Replace sliders and snap on multi-gang faceplate (or multiple single faceplates) and adjust up or down for a snug fit. Multi-gang faceplates (with mounting frames and instructions) are available in a variety of colors to beautify and simplify your installation. See Figure G.

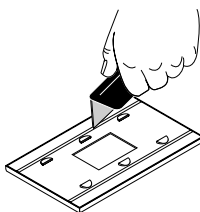
Figure G: Multi-Gang Unit With Faceplate



Cutting Faceplates When Removing Side Sections:

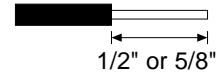
Faceplates will need to be cut if side sections are removed when not using a multi-gang faceplate. Place faceplate on a soft cloth face down. Press firmly and score the groove on the back of faceplate with a razor sharp knife, using vertical groove to keep knife on a straight course. Bend section back and forth to break it off. Smooth edges by placing fine-grained sandpaper on a flat surface and rubbing edge of faceplate over the sandpaper a few times. Hold faceplate steady as you rub to keep a straight edge. See Figure H.

Figure H: Cutting Faceplate



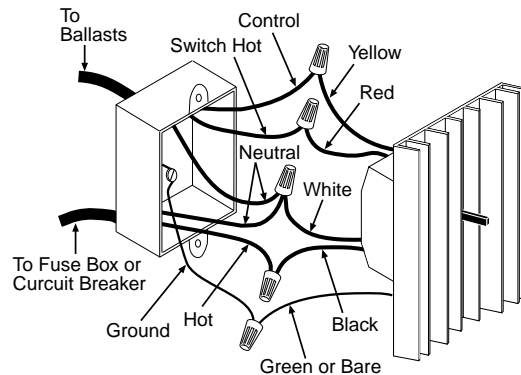
Multigang faceplates, which eliminate the need to cut individual faceplates, are available from Lutron.

1. TURN POWER OFF at fuse box or circuit breaker. Wiring with power on can result in personal injury. Damage caused by wiring with power on will void the warranty.
2. Remove faceplate and slider from dimmer to prevent surface damage and to access mounting holes. Pull out at top and bottom edges, plate will snap off.
3. Strip switchbox wires to the following lengths:
 $\frac{5}{8}$ " for No. 16 and 18 gauge
 $\frac{1}{2}$ " for No. 10, 12, and 14 gauge



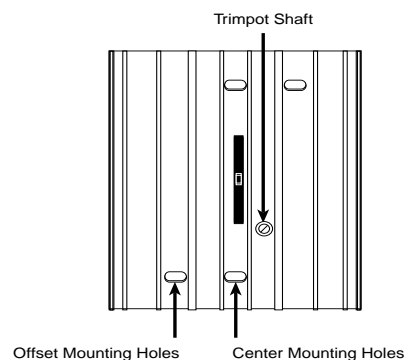
4. Use wire connectors supplied to make the connections shown in Figure I. Refer to the appropriate wiring diagram for your application on page 4, when installing dimmer. Additional wiring information may be found on ballast.

Figure I: Switchbox Wiring



5. Carefully push wires into switchbox allowing room for the dimmer's backcover.
6. Mount dimmer into the switchbox using center mounting holes in dimmer base and screws provided. See Figure K. Unit MUST be mounted vertically.

Figure K: Front View - Single Unit Installation



7. Turn power ON.

8. For Lutron electronic ballasts ONLY:

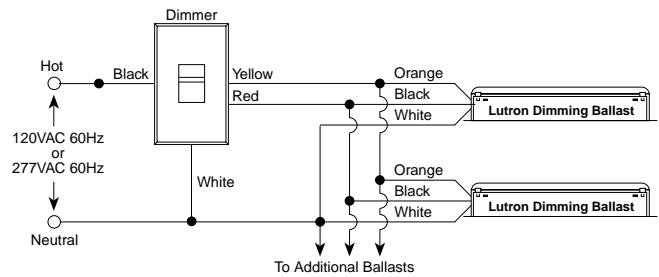
This unit is factory-calibrated and does not require low-end light adjustment when used with Lutron FDB or ECO-10 electronic ballasts. If lamps flicker or drop out at minimum dimming level, there may be an installation error. Continued use of the system in this mode will cause premature lamp failure. If this condition exists, call the **Lutron Technical Assistance Hotline** at: 1-800-523-9466.

For magnetic ballasts ONLY:

- Run lamps at full intensity (slider at top position) for 15 minutes to warm lamps. **Note:** For proper dimming performance lamps must be operated at full intensity for 100 hours prior to dimming.
- After 15 minutes push slider to low intensity position (as far down as possible without clicking off).
- Locate trimpot adjustment shaft shown in Figure K.
- Minimum light intensity is initially set at the factory. Use the screwdriver provided to turn the trimpot screw (inside trimpot shaft) clockwise to increase light level and counterclockwise to lower light level.

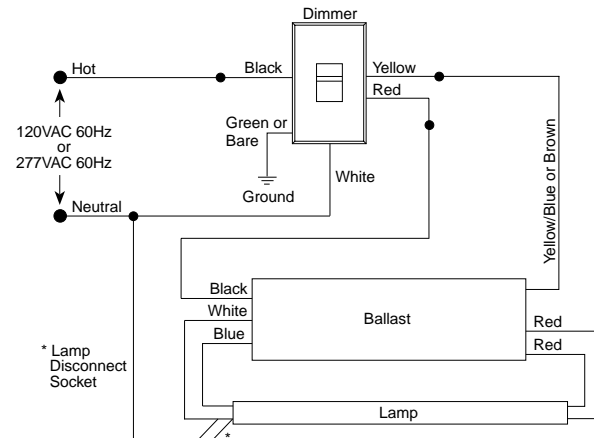
9. Replace slider and snap faceplate on dimmer by pressing firmly at the top, center, and bottom tabs.

NF-10/NF-10-277 with Lutron Ballast

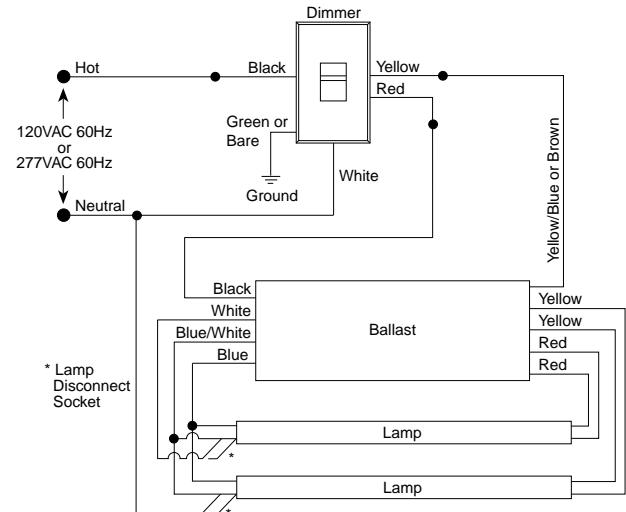


NF-10, NF-20, NF-30, NF-10-277, NF-20-277 with Magnetic Ballast

With one lamp ballast



With two lamp ballast



Worldwide Technical and Sales Assistance

If you have questions concerning the installation or operation of this product, call the **Lutron Technical Assistance Hotline:** (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 unit that is defective in materials or manufacture within one year after 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 damage resulting from 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 may not apply to you.