

# RL-ADJ

Item #379



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**OVERVIEW:** REGULATED LIGHTING uses track power to provide illumination in cars or a fixed source for stationary illumination. Maximum illumination is reached at approximately 1.25 volts above the set illumination voltage and remains constant for the balance of the speed range. REGULATED LIGHTING gives a more intense and uniform illumination, and uses less current. The RL-ADJ is completely compatible with our DC sound systems, LOCOMOTIVE sound systems, and all standard AC, DC and DCC track power with NO extra items required. The maximum input voltage is 25 volts AC, 30 volts DC.

**INSTALLATION:** All REGULATED LIGHTING devices are to be mounted where space permits. Installation can be done by attaching wires to the existing 2 pin connector's leads for track power pickup and peeling the double sided tape to secure the unit in the position desired. DO NOT allow any other metal part to come in contact with any part on the lighting board. This will damage the lighting board and is not covered under any warranty!

This unit can provide up to 1/2 ampere of lighting load and has an adjustable voltage output from 1.25 to 5 volts. Since the voltage is user selected, any type lamp in the range given can be used. The lamps included are nominally rated for 2.7 volts, 0.060 amps, 6000 hours. Most model railroad type lamps are typically rated for 250 hours. If the provided lamps are operated at a higher voltage their life will be cut shorter, a lower voltage will increase their life. A good setting for the suggested illumination of the included lamps is to set the potentiometer at 1 o'clock. With the lamps provided, the RL-ADJ can power a total of 8. Four lamps have been supplied without placing them so that you can place the lamps as desired. Extra lamps can be purchased as item #383. There are 16 lamp mounting provisions on the board. The board is also designed to be broken into sections with jumper wire locations provided. The breaking locations are shown by dashed lines with extra holes drilled through the board to provide an easier break. You must also be careful when handling the unit that it does not inadvertently break when not desired. If breaking the unit into sections, 2 wires are required between to continue power to the next section. If the end section is not required, discard it or keep it for another application. As always with electronics, use only rosin core solder or others appropriate for electronics, paste solder fluxes, including rosin pastes such as "NOKORODE" will eventually destroy wires and printed circuit boards. All soldering is to be done with an appropriate low wattage pencil tip iron. After the lamps have been placed into their appropriate locations, peel the double sided tape and adhere to a clean surface. If more double sided tape is required it can be purchased as item #388. Item 388 is a proper tape for use with electronic equipment.

Things to look for when installing:

- 2 rail operators should make sure the pickup wheels are on the same side of each truck. If not, a short will occur when the car is placed on the track. Make sure each truck picks up from an opposite rail. If not, the lights will not come on!
- 3 rail operators, the center rail should be connected to the red wire and the outside rail pickups should be connected to the chassis or trucks with appropriate wipers for the outside rail.

Illumination of a drumhead on a streamlined passenger car is easy! Drill out the end of the car and drumhead to allow a lamp to pass through from the inside. Place a lamp in position 8, pointing it out the rear! You will be pleased with the results. If you have to shorten the board to fit it, do so. This position rotates the filament in the lamp for better and illumination.

Drafting type paper is an excellent choice for a light diffuser inside the car along the windows. This helps diffuse the light within the car providing a more uniform appearance. You might also consider placing reflective metal duct tape along the inside roof to reflect the light downward within the car.

If two miniature 1.5 volt lamps are needed, simply place them in series and connect them to one of the lamp positions on the lighting board. To use LEDs place them with the correct polarity in series with an appropriate resistor ( $r = (V - 1.8) / 0.10$ , for setting to 2.7 volts and 10 milliamps the resistor would be 90 ohms, for standard values use a 100 ohm 1/8 watt).

