

# A Guide to Using Dimmable Receptacles

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## Overview

A special Lutron® receptacle, for dimming table/floor lamps, is available in two models: DDTR (Duplex), and HDTR (Half). Model DDTR (Duplex) allows both outlets to be used for dimming. Model HDTR (Half) allows the top outlet to be used for dimming while the bottom outlet is a standard receptacle. These dimmable receptacles provide a solution for dimming table/floor lamps directly through a receptacle in both residential and commercial applications. Both DDTR and HDTR are UL® Listed to be controlled by UL® Listed Lutron® dimmers. This guide provides answers to typical questions encountered by the Lutron® Technical Assistance and Applications personnel concerning the use of receptacles for dimming purposes.

## FAQs

### **Why do I need a special receptacle for dimming use?**

The National Electrical Code® (NEC®) prohibits the use of standard receptacles for dimming purposes. The DDTR and HDTR dimmable outlets are specifically designed to mechanically reject all NEMA standard plugs and thus can not be used for any other device (fan, heater, vacuum, radio, etc.). These receptacles will only accept the special Lutron® replacement plug for dimming use (RP-FDU). The result is an NEC® compliant way to control a table/floor lamp with a dimmer.

### **How does the Lutron® receptacle for dimming use comply with the National Electrical Code®?**

Technically, the receptacle for dimming use and replacement plug system comprises a “special-purpose connector” whose specific intention is to establish a unique electrical connection between the table/floor lamp and the dimmer. The DDTR and HDTR receptacles with the RP-FDU plug are UL® Listed for use with UL® Listed Lutron® dimmers for the control of table/floor lamps.

Since one outlet of the HDTR is for dimming use and the other is for standard use, it requires two separate hot feeds, one constant or switched hot and one dimmed hot. If these feeds are supplied from different circuits or split-wired, a means to simultaneously disconnect these circuits must be provided at the panelboard where they originate (NEC® 2002, Article 210.7(C)). A 2-pole circuit breaker or two single-pole circuit breakers with an approved handle tie can be used to accomplish this simultaneous disconnect. When using the HDTR with dimming panels, it is recommended that you use the feed-through type (i.e., a dimmer panel without circuit breakers inside).

### **What kind of lamp may I connect through a receptacle for dimming use?**

You may use any UL® Listed two-wire lamp with SPT-2 cord as long as the load type, wattage, and dimmer are compatible since the dimmable receptacle acts as an electrical connection. Ensure that the load does not exceed the rating of either the plug or the dimmer.

### **May I replace my current switched receptacle with either the DDTR or HDTR?**

Yes, a DDTR may replace a switched receptacle only when that receptacle is not required for NEC® compliance. Otherwise, you must gang the DDTR with a standard receptacle or install the DDTR in a new location by itself. The HDTR may replace a switched receptacle in which only one outlet is switched. If both outlets of a standard duplex are switched, additional wiring may need to be fed to the DDTR to control each half independently. For receptacle wiring diagrams refer to the spec submittal and installation instructions found on [www.lutron.com](http://www.lutron.com).

### **Do I need to use a dimmer that has a neutral-wire connection?**

It is highly recommended that neutral-wire dimmers be used in RadioRA® 2 and HomeWorks® QS systems. The neutral connection allows for system commissioning without the need for the actual lighting load to be installed and connected to the dimming control. When a neutral dimmer is not used, the lamp must be connected to the outlet and the mechanical switch must be set to ON when commissioning the system. Refer to the section titled *Recommended Dimming Controls for RadioRA® 2 and HomeWorks® QS Systems* for a list of recommended neutral-wire dimming controls.

## Products

### Receptacles for Dimming Use

#### Model Numbers:

#### 15 A – Duplex for Dimming Use

CAR-15-DDTR-xx  
 SCR-15-DDTR-xx  
 NTR-15-DDTR-xx  
 CAR-15-DDTR-C-xx  
 SCR-15-DDTR-C-xx  
 NTR-15-DDTR-C-xx

#### 20 A – Duplex for Dimming Use

CAR-20-DDTR-xx  
 SCR-20-DDTR-xx  
 NTR-20-DDTR-xx  
 CAR-20-DDTR-C-xx  
 SCR-20-DDTR-C-xx  
 NTR-20-DDTR-C-xx

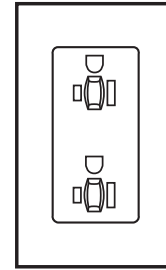
#### 15 A – Half for Dimming Use

CAR-15-HDTR-xx  
 SCR-15-HDTR-xx  
 NTR-15-HDTR-xx  
 CAR-15-HDTR-C-xx  
 SCR-15-HDTR-C-xx  
 NTR-15-HDTR-C-xx

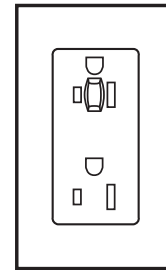
#### 20 A – Half for Dimming Use

CAR-20-HDTR-xx  
 SCR-20-HDTR-xx  
 NTR-20-HDTR-xx  
 CAR-20-HDTR-C-xx  
 SCR-20-HDTR-C-xx  
 NTR-20-HDTR-C-xx

<b>Power</b>	125 V~ 50/60 Hz
<b>Load Types</b>	As specified by dimming control
<b>Colors</b>	NTR – Architectural Matte SCR – Satin Colors™ CAR – Gloss



**NTR-15-DDTR**  
 Duplex for Dimming Use



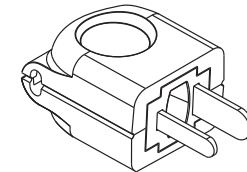
**NTR-15-HDTR**  
 Half for Dimming Use

### Replacement Plug for Dimming Use

#### Model Numbers:

RP-FDU-10-XX Replacement plug for dimming use  
 RP-FDU-10-C-XX

<b>Power</b>	125 V~ 50/60 Hz
<b>Load Types</b>	As specified by dimming control
<b>Colors</b>	NTR – Architectural Matte SCR – Satin Colors™



**RP-FDU-10**  
 Replacement Plug for  
 Dimming Use

## Recommended Dimming Controls for RadioRA® 2 and HomeWorks® QS Systems

### RadioRA® 2

RRD-6NA-xx  
RRD-10ND-xx  
RRD-HyBRL-xx\*  
RRT-G25LW\*  
LQRJ-WPM-6P  
GRAFIK Eye® QS

### HomeWorks® QS

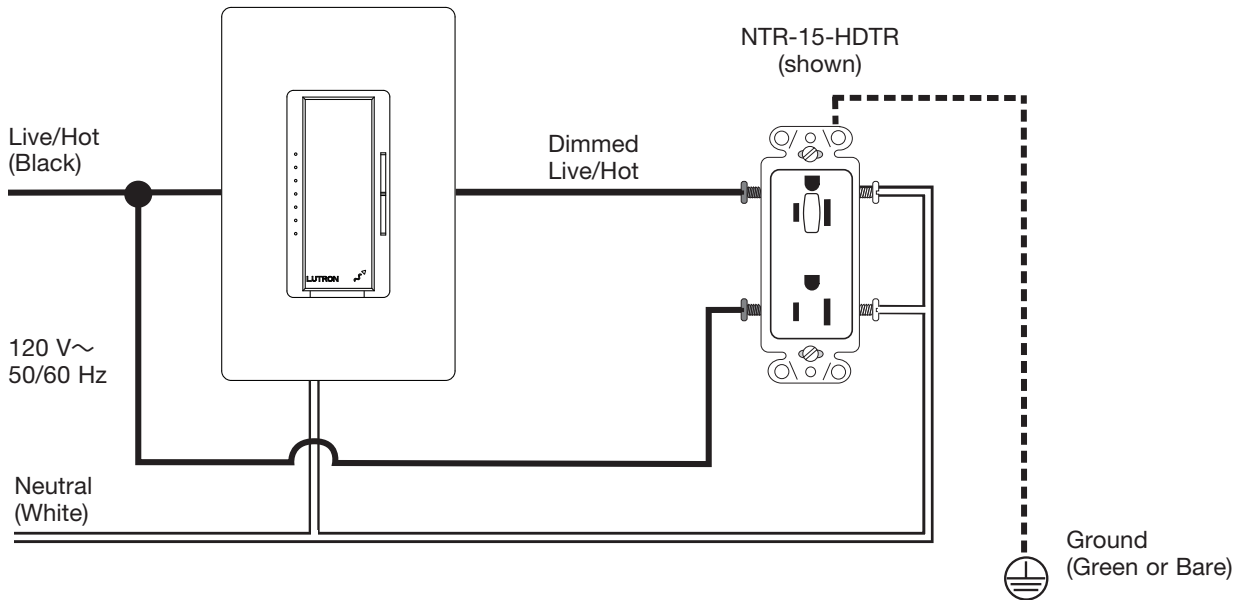
HQRz-6NA-xx  
HQRz-6ND-xx  
HQRz-10ND-xx  
HQRz-HyBRL-xx\*  
HQRT-G25LW\*  
HW-RPM-4U-120  
HW-RPM-4A-120  
LQRJ-WPM-6P  
GRAFIK Eye® QS

xx = color code; refer to the product Specification Submittal for available colors and finishes  
y = button count; 3, 4, 5, and 6 button with raise/lower configurations available for the Hybrid Keypad  
z = A or D; represents Architectural or Designer opening options

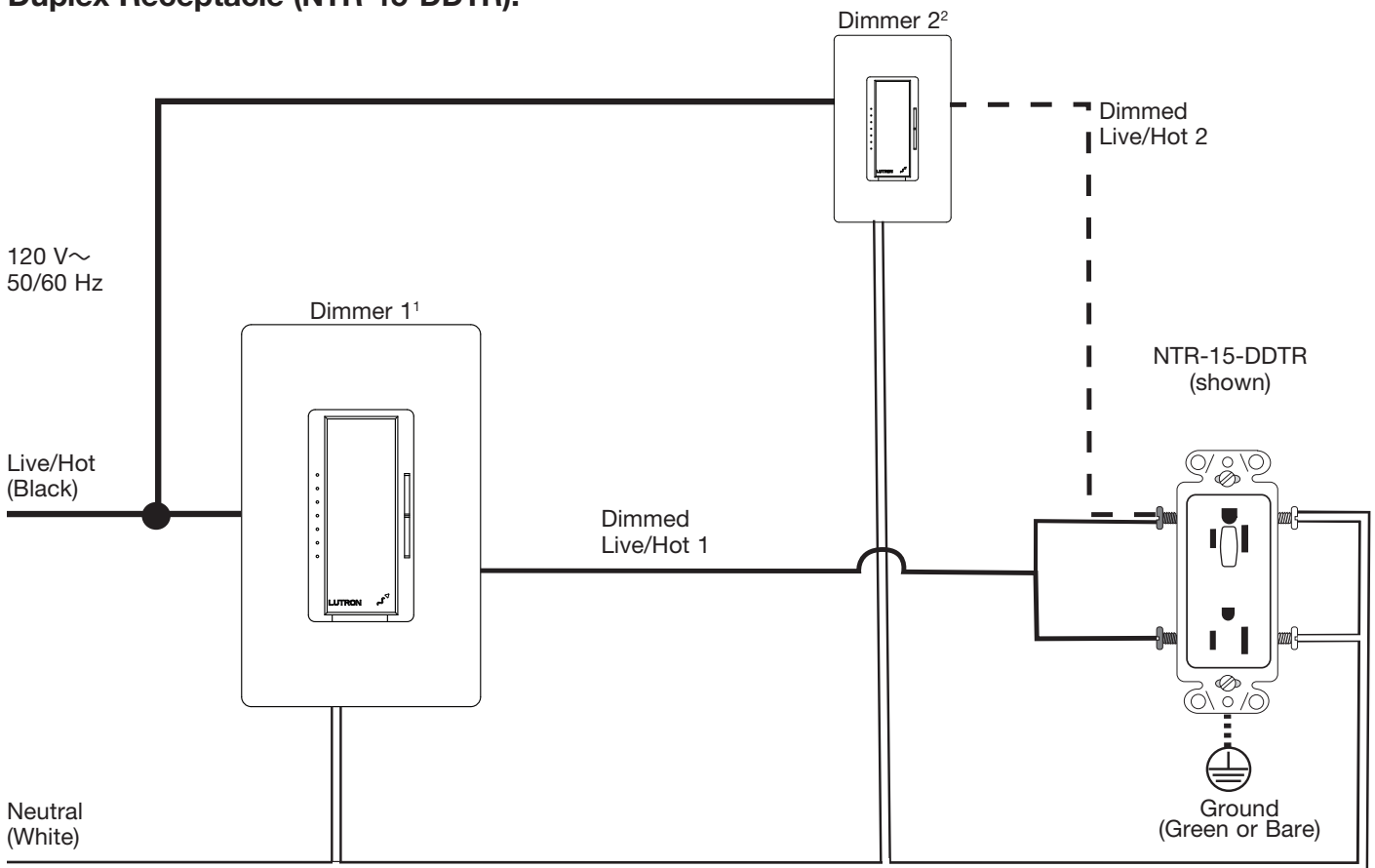
\* Neutral connection for the product is optional but recommended when used with dimmable receptacles.

## Wiring Diagram Examples

### Half-Duplex Receptacle (NTR-15-HDTR):



### Duplex Receptacle (NTR-15-DDTR):



<sup>1</sup> Please refer to Page 3, **Recommended Dimming Controls for RadioRA<sup>2</sup> and HomeWorks<sup>®</sup> QS Systems**, for the appropriate device and follow the corresponding load ratings as specified for the dimmer.

<sup>2</sup> Dimmer 2 required if the total plug-in load(s) exceeds the load ratings for a single dimmer. Please refer to dimmer specification for maximum load ratings

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UL is a registered trademark of Underwriters Laboratories.  
NEC is a registered trademark of National Fire Protection Association, Quincy, Massachusetts

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