

**DESIGNATORS ARE CONTAINED IN OUR LED FIXTURE PART NUMBERS TO INDICATE THE DIMMING OR CONTROLLING FUNCTION OF THAT PARTICULAR FIXTURE. THEY ARE EXPLAINED AS FOLLOWS:**

- ND** This means the fixture is not intended to be used with a dimmer, i.e., non-dimming.
- TE** This means the fixture will work with MOST quality Trailing Edge dimmers. These dimmer types are also known as Reverse Phase or Electronic Low Voltage (ELV), and are available as wall mount and rack mount modules. It should be noted that this is one of 2 types of Phase dimmers (see LE below for the other).
- T/1** See TE above, but can dim to 1% with certain dimmers.
- LE** This means the fixture will work with MOST quality Leading Edge dimmers. These dimmer types are also known as Forward Phase, Incandescent, Halogen or Triac, and are available as wall mount and rack mount modules. It should be noted that this is one of 2 types of Phase dimmers (see TE above for the other).
- L/1** See TE above, but can dim to 1% with certain dimmers.
- LTE** This means the fixture will work with MOST quality Leading Edge dimmers and Trailing Edge dimmers (see TE and LE above).
- PH** See LTE above.
- RACK** This means the fixture is specially designed to work with theatrical style rack mount Leading Edge dimmers manufactured by ETC®, Leprecon® and Elation®.
- 0-10** This means the fixture will work with MOST quality 0-10V or 1-10V dimmers. These dimmer types are also known as Fluorescent, Direct Current or DC, and are available as wall mount and rack mount modules. These dimmers may only dim to 40%.
- D/1** See 0-10 above, but can dim to 1% with certain dimmers.
- D/0** See 0-10 above, but can dim to off, or, in some cases, 0.1% with certain dimmers.
- TRI** This means the fixture will work with MOST quality Leading Edge, Trailing Edge, 0-10V and 1-10V dimmers (see TE, LE and 0-10 above). It is fixture specific as to what percentage the fixture will dim.
- LU3** This means the fixture will work with a Lutron® 3-wire dimming system. This fixture can dim to 1% using certain Lutron® dimmers/controllers. This system is limited to 50W max fixtures.
- LUT** This means the fixture will work with a Lutron® 2-wire TE dimming system. This fixture can dim to 1% using certain Lutron® dimmers/controllers. This system is limited to 50W max fixture.
- LU2** See LUT above.
- ECO** This means the fixture will work with a Lutron® EcoSystem® dimming system. This fixture can dim to 1% using certain Lutron® dimmers/controllers. This system is limited to 50W max fixtures.

- ECP** This means the fixture will work with a Lutron® Premier dimming system. This fixture can dim to off using certain Lutron® dimmers/controllers. This system is limited to 20W max fixtures.
- IP** This means the fixture has a dimmer built into the fixture itself. It has an integral potentiometer located on the fixture. This fixture WILL NOT function with EXTERNAL wall or rack dimmers. This dimmer type will dim to about 40%.
- DMX** This means the fixture will work with any DMX controller that complies with the USITT DMX512-A standard. This designation on a Times Square fixture means there is no on-board means to set a fixture address. Fixture addressing can be accomplished using Remote Device Management (RDM) (see below) or, in some fixture specific models, using Bluetooth (BLU) (see below). These fixtures must never be connected to a circuit with any type of dimmer listed above.
- DX** See DMX above.
- DXB** See DMX above.
- DXE** As DMX above, but has on-board means to set fixture addresses. The fixture also may have other capabilities not available with other Times Square DMX fixtures. These features are fixture specific.
- RDM** As DMX above, but also has RDM (Remote Device Management) capability.
- BLU** This means the fixture can be operated by Bluetooth, or in some fixture specific cases, addressing the fixture for control by DMX.
- BT** See BLU above.
- DALI** This means the fixture will work with most DALI controllers.

**IT SHOULD BE NOTED THAT NOT ALL TIMES SQUARE FIXTURES ARE AVAILABLE WITH ALL TYPES OF DIMMING OR CONTROLLING. NOT ONLY IS THE DIMMING OR CONTROLLING SPECIFIC TO CERTAIN FIXTURES, IN MANY CASES IT IS SPECIFIC TO THE INPUT VOLTAGE, LUMEN OUTPUT, MOUNTING MEANS, ETC.**

**DESIGNATORS ARE CONTAINED IN OUR LED FIXTURE PART NUMBERS TO INDICATE THE TYPE OF CONNECTOR USED FOR CONNECTING THE CONTROL WIRING FOR THAT PARTICULAR FIXTURE. THEY ARE EXPLAINED AS FOLLOWS:**

- 3** XLR 3 Pin Connectors (1 Male, 1 Female Pair).
- 5** XLR 5 Pin Connectors (1 Male, 1 Female Pair).
- T** Terminal Blocks mounted to fixture.
- E** Ethernet RJ45 Connectors (AKA CAT5, CAT5e, CAT 6 Connectors) (1 pair).
- RJ45** See E above.
- TC** Terminal Blocks mounted in fixture canopy.



# NOTES ON LED FIXTURES AND DIMMING DRIVERS

**IT SHOULD BE NOTED THAT SOME FIXTURES ARE AUTOMATICALLY PROVIDED WITH ONE OR TWO OF THE ABOVE TYPES. IF THAT IS THE CASE, IT WILL BE SPECIFIED ON THE FIXTURE DATA SHEET.**

**IT SHOULD ALSO BE NOTED THAT MANY OF OUR FIXTURES RECEIVE THEIR RESPECTIVE CONTROL SIGNALS THROUGH TRACK ADAPTERS, IN WHICH CASE A CONNECTOR DESIGNATOR IS NOT REQUIRED.**

## **GENERAL NOTES ON DIMMING AND CONTROLLING TIMES SQUARE FIXTURES:**

Many dimmers will allow for full range dimming, while others will dim only to 40%. Some dimmers will work well within a certain range, and perhaps flicker or shut off at the lower settings, rendering that portion of the range unusable. It is impractical to test every fixture type with every dimmer type, and while some combinations work better than others, some may not work at all. It is advisable to pretest a particular fixture with an intended dimmer beforehand to insure that the combination will work as expected. Times Square will do all that it reasonably can to assist in this matter.

Most if not all dimmers have a maximum LED load that can be applied, sometimes as little as 10% of its nominally rated value for non-LED loads.

Dimming LEDs can actually extend their life expectancy, and will not affect the color temperature or CRI.

0-10V / 1-10V dimmer limitations: As a rule, TIMES SQUARE fixtures draw approximately 2mA on the 0-10V or 10-0V control wires for each fixture driver. Most standard 0-10V / 1-10V dimmers have a maximum capacity of 50-80mA. Care should be taken not to overload these dimmer types.

All TIMES SQUARE track with control capabilities has only a single pair of data/control lines for the track, regardless of whether the track has 1 or 2 lighting circuits. Therefore, on 2 circuit track, both circuits are controlled by the same pair of data/control lines. All TIMES SQUARE track with control capabilities will support DMX, RDM, DALI, Lutron® Ecosystem® and 0-10V and 1-10V systems.

Color Tuning (CT) fixtures: There are several methods for controlling TIMES SQUARE Color Tuning fixtures: 0-10V dimmers, Lutron® Ecosystem® dimming systems, Bluetooth, DMX / RDM, as well as a downloadable phone application. The methods are fixture specific. All TIMES SQUARE Color Tuning fixtures come with programming and addressing instructions.

Basic rules for DMX / RDM controlled fixtures: Make certain that the control wiring for the fixtures is in accordance with DMX512-A specifications. Control wiring should be limited to no more than 1000 ft. (approx. 300 meters) in length and connected in a "daisy-chain" fashion. 32 fixtures maximum may be placed on a single run when using DMX only, or 20 fixtures when using RDM. The last fixture and ONLY the last fixture must have a 120 ohm terminating resistance applied to the control signal. Splitters must be used if more than 32 fixtures are to be connected to the same DMX signal. It may be beneficial to use specialists, ie, DMX Integrators when designing complex layouts. NOTE: The common (shield, or drain) wire should NEVER be connected to earth ground except at the control console. All TIMES SQUARE DMX / RDM fixtures come with programming and addressing instructions.