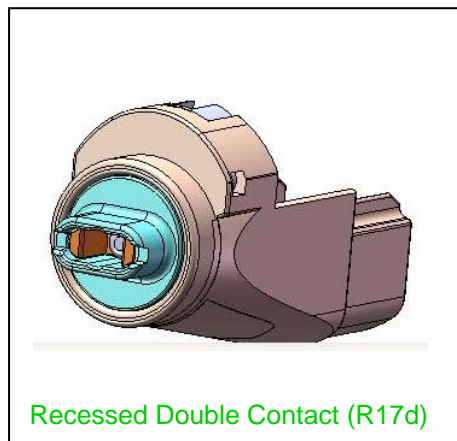


EcoLight[®]

T5 (Retrofit Fixture)

2-foot to 5-foot User's Manual



FEE, FSE, FSI, FSA, FAE, FAU & FAH Series

It is suggested to read this installation manual and follow instructions prior to installation. Incorrect installation and misuse may render the warranty invalid.

EcoPower Electric Ltd

Address: Room 1801, Wing On Central Building, 26 Voeux Road Central, Central, Hong Kong

Tel: (852) 2961 4244 Fax: (852) 3186 3430

Email : cs@ecopower.com Website: www.ecopower.com

Contents

Introduction.....	P3
Product Dimension.....	P4
Notices.....	P5
Prior to Installation.....	P5
Installation for fittings with electromagnetic ballast (Single Lamp).....	P6
Installation for fittings with electronic ballast (Single Lamp).....	P7
Installation for fittings with rapid start ballast (Single Lamp).....	P8
Installation for fittings with rapid start ballast (Double Lamp).....	P9
Circuit Diagram and Important Notices.....	P10

Introduction:

EcoLight® T5 (Retrofit Fixtures) are a new electronic ballast technology integrated within a unique aluminium housing that is designed to retrofit existing fluorescent systems (fixtures/luminaries). This enables power saving of up to 60% when compared to T12-based systems.

The **Retrofit Fixture/Conversion Kit/T5 Retrofit** has been developed to provide the cost-effective solution to upgrade conventional luminaries to the state-of-the-art T5 system performance. **EcoLight® T5** is compatible with T8, T9, T10 and T12 fluorescent fixture technology. It provides numerous immediate and long-lasting benefits that include: energy savings; short payback period; quick installation times; improved light quality; enhanced eye protection; and a high power factor.

EcoLight® T5 is a brilliant concept. The Return on Investment is very high as a result of the inherent benefits in a T5 lighting system. The “**FIXTURE IN FIXTURE**” installation is simple. The patented design is created by mounting a standard T5 fluorescent tube on a slim aluminium housing integrating a fully functional ballast. No starter is required and installation is as easy as retrofitting a normal fluorescent tube.

EcoLight® T5 products are as easy to install. T5 fixtures with special end-cap connectors greatly facilitate the installation. The end-caps unique rotatable design makes the product suitable for all existing luminaries with a wide range of mounting angles.

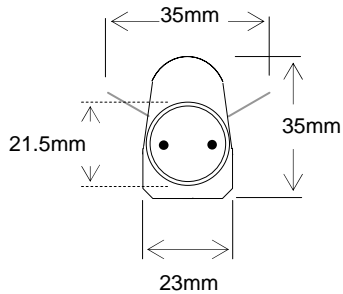
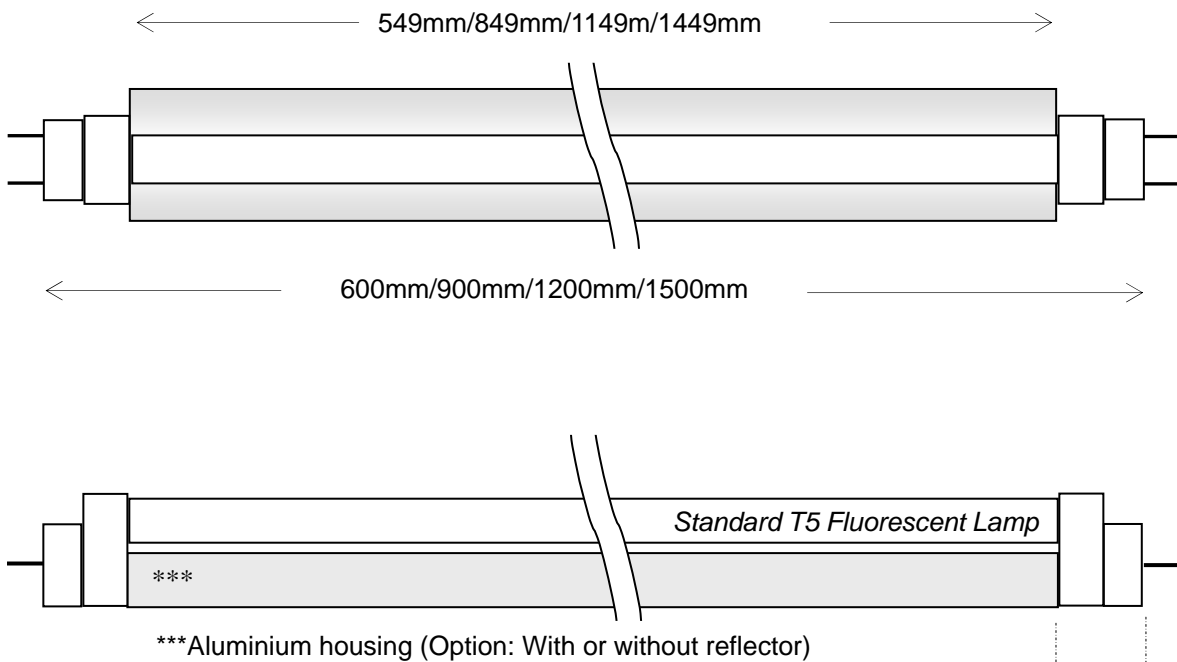
EcoLight® T5 retrofit unit is the most innovative energy saving device in the lighting industry. By utilizing proven PFC and SMT technology, electronic components and proven electronic ballast technology, the solution has been widely applied to retrofit existing Fluorescent Tube Lamp (FTL) fixtures/ luminaries in a wide range of applications.

EcoLight® T5 is designed to protect the environment and people. It not only saves up to 60% energy, but also reuses the existing fixtures keeping these from being discarded thereby decreasing the overall waste associated with a lighting refit. The new control technology incorporated in each unit generates a high operation frequency up to 35,000 Hz. eliminating lamp flickering minimizing the negative effects associated with older fluorescent systems.

By using our line of complimentary components, the EcoLight® T5 Retrofit Fixture can be used as a standalone T5 luminaire for new installations into new or existing buildings.

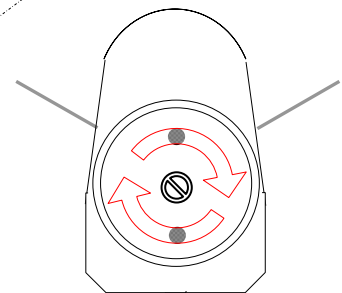
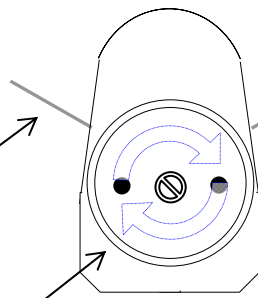
EcoPower provides a full range of T5 Retrofit Fixture products with different types of ballasts and power supply voltages ranging from 110V to 480V. The **EcoLight® T5** products are designed to meet the broadest possible range of applications and to meet the most demanding market requirements. Please refer to the detailed product specifications for additional details.

Product Dimension:



Aluminium Reflector with 120° angle of reflection. Total viewable angle is 240°

G13 adjustable End-Cap can be rotated to fit most T8 and T12 Fixture.



Note: The unique G13 rotational End-Cap makes the product suitable for all existing luminaires with different lamp-holder orientation. Before rotating the bi-pin, the grub screw must be loosened Anti-clockwise by 1/4 turn. After rotation to the required position, the grub screw must be re fixed firmly.

Notices:

- 1) **EcoLight® T5 (Retrofit Fixture)** is used together with a standard T5 fluorescent lamp.
- 2) The product can either be retrofitted to existing fixtures with an electromagnetic ballast or used as a standalone unit since it is built with a T5 electronic ballast allowing, it can function independently.
- 3) For fixtures with existing electronic or rapid start ballasts, simple wiring change is required to bypass the existing ballast. Please refer to and follow the instructions included on pages 7 to 9 in this manual.
- 4) The ballast and wires inside the fixture are built with double-insulation, but suitable connections to ground the fixture may be still required. Refer to local code requirements for more specific guidance..
- 5) The lifetime of the EcoLight® T5 products will be reduced under high temperature operation. Please NOTE that the **EcoLight® T5** products should be installed in environments with good ventilation. Suppliers are not responsible for any failure or defect of the **EcoLight® T5** products caused through the operation of the unit outside the specified working temperature range of -15°C~ +50°C.
- 6) Please do not remove the fluorescent lamp from the fixture without switching off the power supply to the fixture.
- 7) Please contact the fixture supplier with any questions regarding the proper installation and operation of the **EcoLight® T5 (Retrofit Fixture)**.

Prior to Installation:

1. Take out the **EcoLight®** products carefully from the packaging and check that the products supplied are identical with the delivery notes and the product description on the purchase order; Check the products supplied are compatible with the existing fixtures and fluorescent lamps
2. Check that the **Voltage** ratings of the supplied products are compatible with the existing system installation.
3. Check to ensure that there are no loose parts or other damage to the **EcoLight®** product(s) from shipping or handling prior to proceeding with the installation.
4. Check that the existing fixture uses an ELECTROMAGNETIC BALLAST, and NOT an electronic ballast or rapid start ballast.
5. For fixtures with electronic ballast or rapid start ballast, a simple wiring change must be performed in order to bypass the existing ballast. Please follow the instruction from page 7 to page 9 of this manual.
6. Note that the **EcoLight® T5** products can operate without any ballast inside the existing fixtures. That means all existing ballast(s) (Including the electromagnetic ballast) can be bypassed with or without physical removal of the ballast itself.
7. Make sure there is no **power factor correction capacitor** inside the fixture. If the existing fixture to be refitted does incorporate a capacitor, please consult our customer service for further directions on how to proceed with the refit of the fixture.

Installation for fittings with electromagnetic ballast:

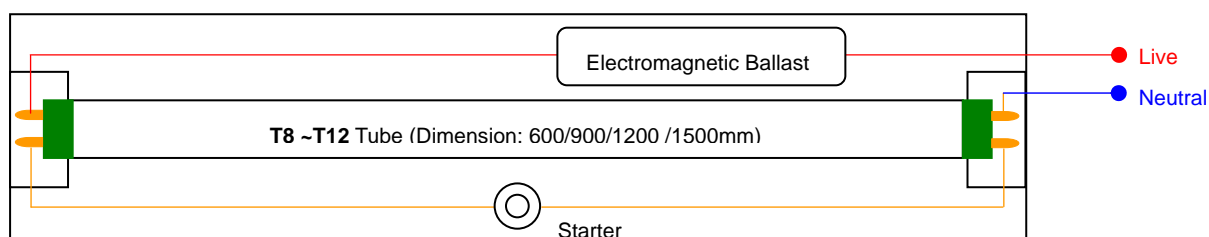
For fittings with electromagnetic ballast (or magnetic ballast or conventional ballast), the EcoLight T5 products can be installed to the existing fittings directly without removing or bypass the existing ballast

Procedure:

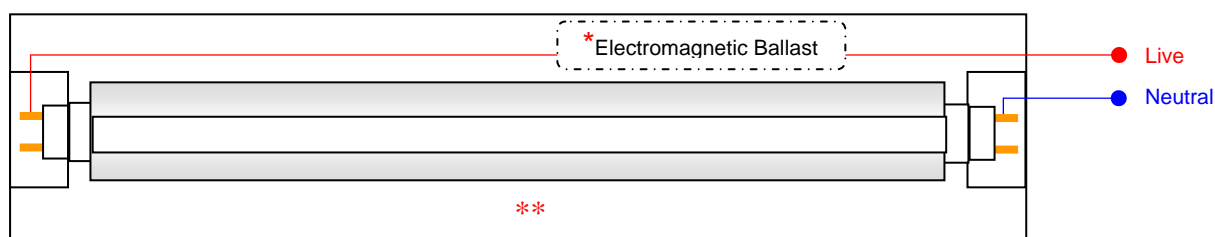
- 1) Installation of the unit must be completed by appropriately-qualified persons.
- 2) Check that the power supply to the existing fluorescent lamp is turned off before starting the installation.
- 3) Remove the existing fluorescent lamp(s) from the fixture.
- 4) Remove the existing Starter to form an open-circuit.
- 5) Remove / by-pass the existing PFC capacitor.
- 6) Install the standard T5 tube to **EcoLight® T5 Retrofit Fixture**.
- 7) Connect the grounding wire to the earth sign “≡” under the fixture (if required).
- 8) Reinstall the completed T5 Retrofit fixture into the existing fixture.
- 9) Check that the completed T5 Retrofit fixture is fitted firmly within the existing fixture.
- 10) Turn on the power and check that the lamp operates properly.
- 11) Installation is complete.



Connection Diagram before installation



Connection Diagram after installation



* The electromagnetic ballast can be removed, bypassed or kept inside the fixture.

** The starter is not required and must be removed! Circuit must be opened in this application.

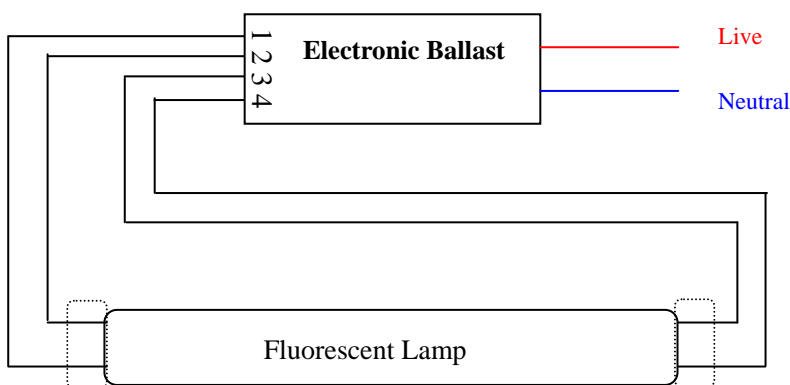
Installation for fittings with electronic ballast (Single Lamp):

For fittings with electronic ballast, simple wiring changes required to bypass the existing ballast.

Procedure:

- 1) Installation of the unit should be completed by appropriately- qualified persons.
- 2) Check that the power supply to the existing fluorescent fixture is turned off before proceeding further with the installation.
- 3) Remove the existing fluorescent tube(s).
- 4) Complete the changes shown# **Bypass Wiring 1**.
- 5) Fix the standard T5 tube to **EcoLight**[®] T5 Retrofit Fixture.
- 6) Connect the grounding wire to the earth sign “≡” under the fixture (if required).
- 7) Install the complete unit into the existing fixture.
- 8) Ensure the complete unit is fitted firmly.
- 9) Turn on the power, check that the unit operates correctly
- 10) Installation is complete.

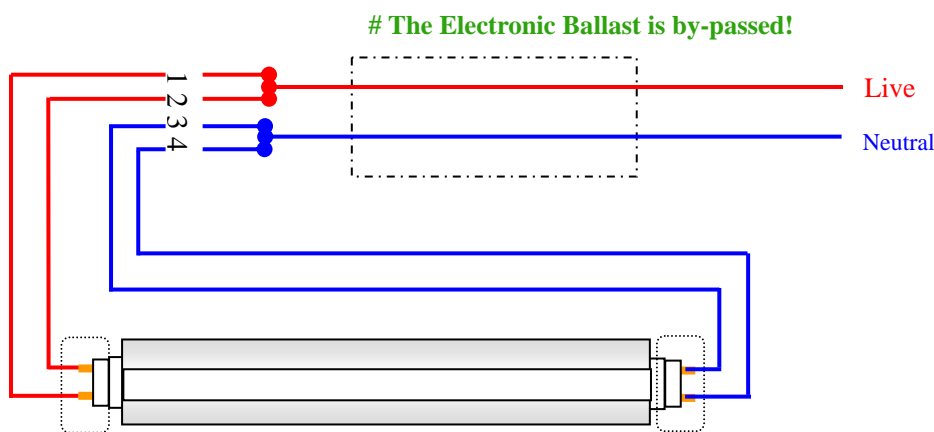
Connection Diagram before installation



Bypass Wiring 1:

1. Connect Live to either 1 & 2.
2. Connect Neutral to either 3 & 4.
3. Bypass wiring is completed.

Connection Diagram after installation



Complete unit of EcoLight T5 and tube

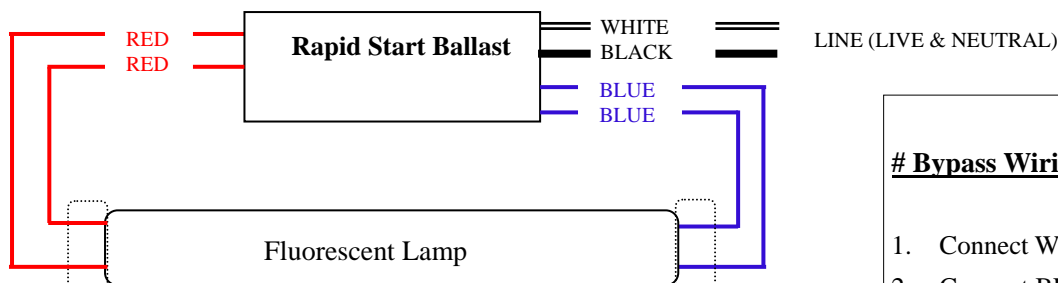
Installation for fittings with rapid start ballast (Single Lamp):

For fittings with rapid start ballast for single lamp, simple wiring changes are required to bypass the existing ballast.

Procedure:

- 1) Installation of the unit should be completed by appropriately- qualified persons.
- 2) Check that the power supply to the existing fluorescent fixture is turned off before proceeding further with the installation.
- 3) Remove the existing fluorescent tube(s).
- 4) Complete the changes shown# **Bypass Wiring 2.**
- 5) Fix the standard T5 tube to **EcoLight®** T5 Retrofit Fixture.
- 6) Connect the grounding wire to the earth sign “≡” under the fixture (if required).
- 7) Install the complete unit into the existing fixture.
- 8) Ensure the complete unit is fitted firmly.
- 9) Turn on the power, check that the unit operates correctly
- 10) Installation is complete.

Connection Diagram before installation

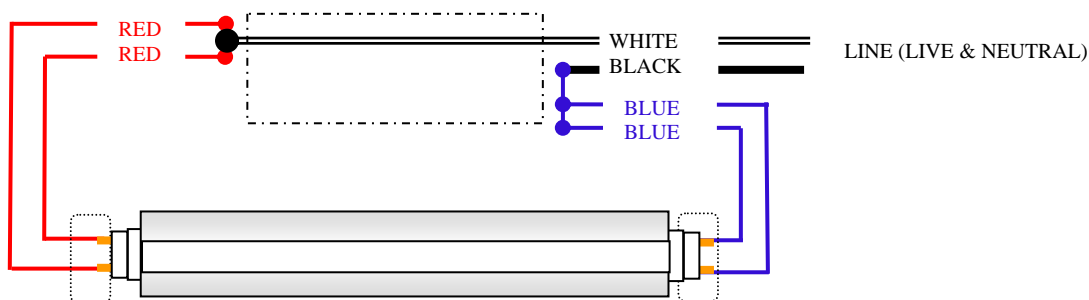


Bypass Wiring 2:

1. Connect WHITE to RED
2. Connect BLACK to BLUE
3. Bypass wiring is completed.

Connection Diagram before installation

#The Rapid Start Ballast is bypassed!



Complete unit of EcoLight T5 and tube

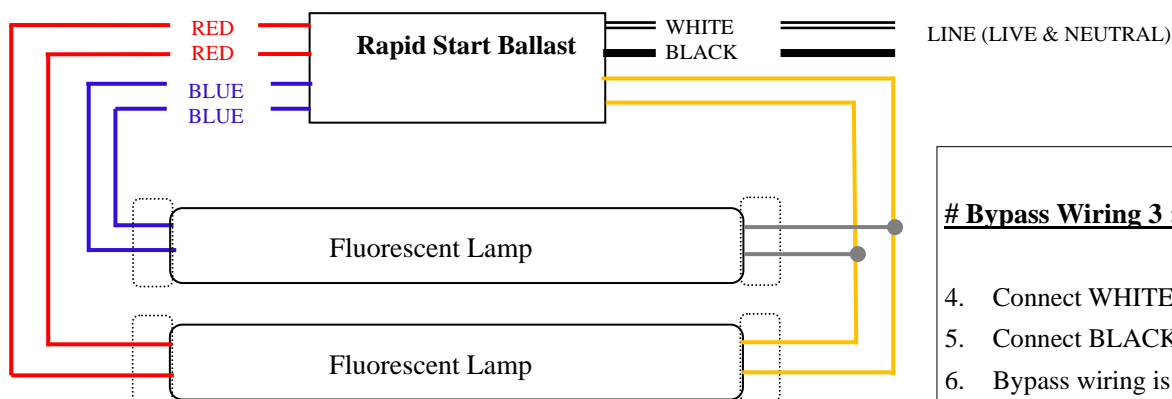
Installation for fittings with rapid start ballast (Double Lamp):

For fittings with rapid start ballast for 2 lamps, simple wiring changes are required to bypass the existing ballast.

Procedure:

- 1) Installation of the unit should be completed by appropriately- qualified persons.
- 2) Check that the power supply to the existing fluorescent fixture is turned off before proceeding further with the installation.
- 3) Remove the existing fluorescent tube(s).
- 4) Complete the changes shown# **Bypass Wiring 3**.
- 5) Fix the standard T5 tube to **EcoLight**[®] T5 Retrofit Fixture.
- 6) Connect the grounding wire to the earth sign “≡” under the fixture (if required).
- 7) Install the complete unit into the existing fixture.
- 8) Ensure the complete unit is fitted firmly.
- 9) Turn on the power, check that the unit operates correctly
- 10) Installation is complete.

Connection Diagram before installation

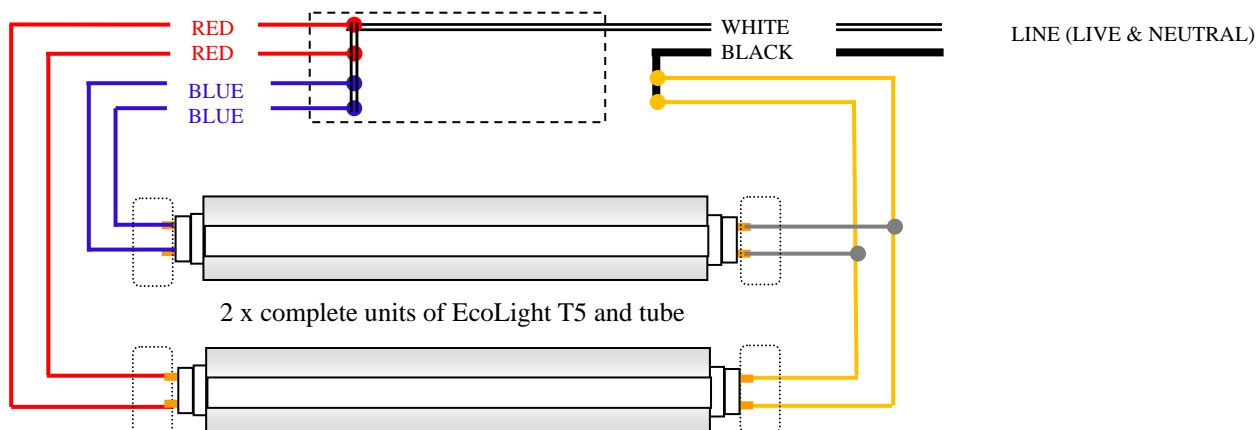


Connection Diagram before installation

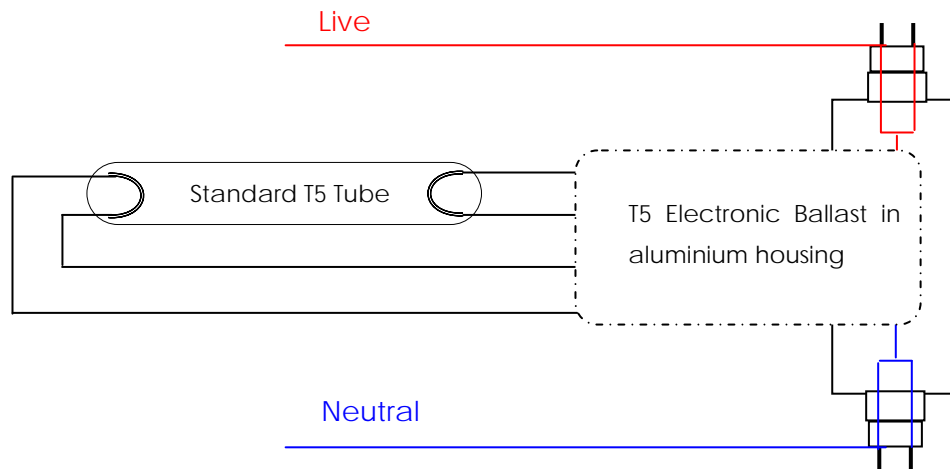
Bypass Wiring 3 :

4. Connect WHITE to RED & BLUE
5. Connect BLACK to YELLOW
6. Bypass wiring is completed.

#The Rapid Start Ballast is bypassed!



Circuit Diagram:



Important Notices:

- 1) To ensure safety, main power should be turned off during installation.
- 2) Only qualified persons install the unit.
- 3) Although the ballast and wires inside the fixture are built with double-insulation, earthing or grounding may be necessary in some countries by regulation.
- 4) The installation complies with the information contained in this publication.
- 5) WARNING – Risk of fire or electric shock. Do not alter, relocate, or remove wiring, lamp-holders, ballast, or any other electrical component.
- 6) Do not make or alter any open holes in an enclosure of wiring or electrical components during kit installation.
- 7) WARNING – To prevent wiring damage or abrasion, do not expose wiring to edges of sheet metal or other sharp objects.
- 8) The models are “Not for use with dimmers” or Not for use in Luminaries controlled by a dimmer”.
- 9) CAUTION – Risk of Electric Shock – Use in Dry Locations Only.
- 10) The models are not intended for use with emergency exit fittings or emergency exit lights.
- 11) WARNING – After by-pass the existing ballast, the re-installation of original T8 or T12 may cause short-circuit or explosion.

EcoPower Electric Limited, or their agents do not assume any liability, expressed or implied, for any consequences resulting from inappropriate, negligent or incorrect installation, application, use or adjustment of the product or circuit design, or from the mismatch of the unit to a lamp