

# Monochrome Tube

## INSTALLATION GUIDE

### V0.7



Cover:

Monochrome Tube Cold White

Monochrome Tube Warm White

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For your own safety and that of the product, please read this installation guide carefully before beginning setup and installation.

## 1. INTRODUCTION

### 1.1 General

The Traxon Monochrome Tube is an IP66-rated slim LED tube for any wall or facade accent-lighting. Available in 500mm, 995mm, and 1490mm lengths, the simple but robust construction, allows up to 24, 12, or 8 Tubes (12m) to be daisy chained using a single power supply.

Monochrome Tube distinguishes façades, walls, and borders with a concentrated, even radiance due to its front diffuser. Its compact, low-profile design is available in three different lengths and combined with project-specific mounting options the Monochrome Tube is able to meet rigorous application demands. For installations of varying size, the Monochrome Tube offers flexibility and lends vitality to any project.

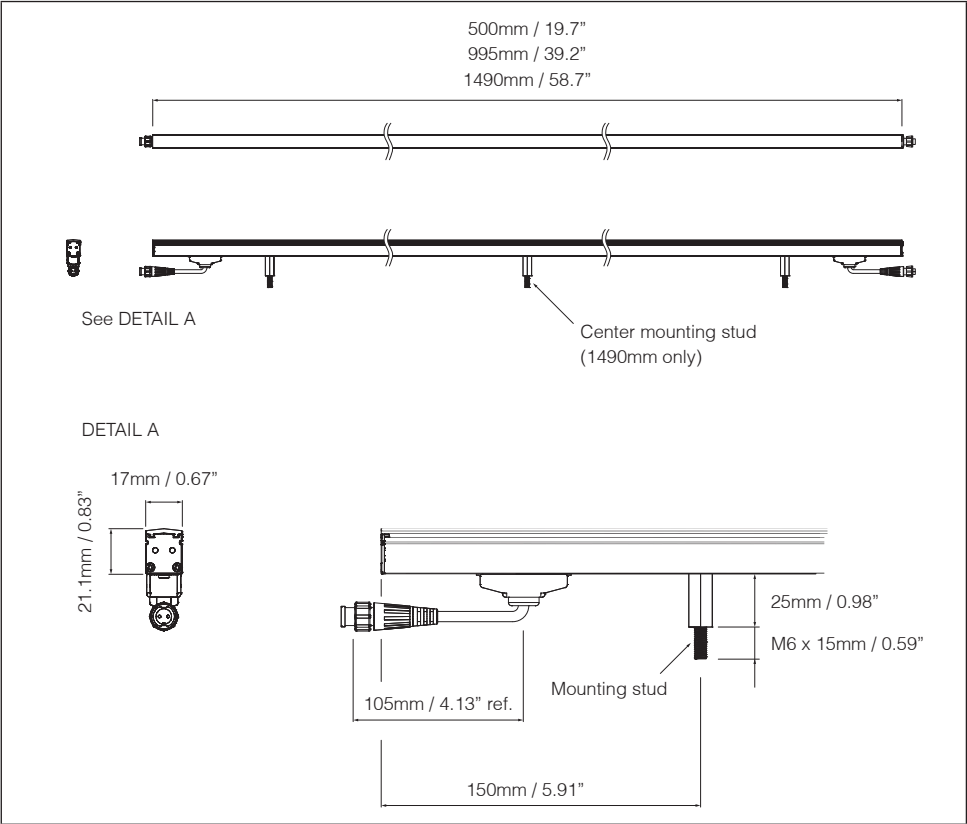
The Monochrome Tube has an aluminium extrusion housing with a PC front diffuser and is suitable for outdoor environments.

Features:

- Available lengths: 500mm, 995mm and 1490mm
- Simple plug'n'play connection system
- Daisy Chain System
- Sleek and slim profile
- Outdoor rating (IP66)
- Optional dimming via DMX512 through DMX2PWM dimmer

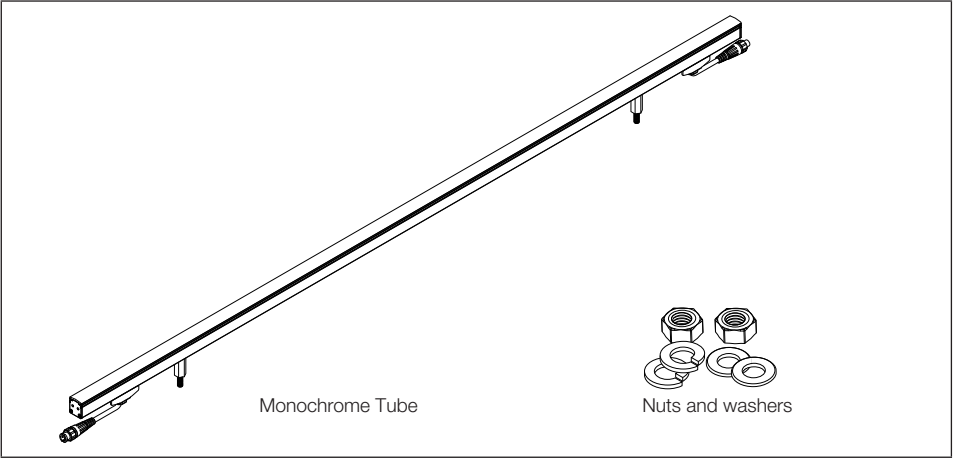
1.2 Dimensions

FIG.1: Monochrome Tube



1.3 Packing Contents

FIG.2: Packing Contents



## 2. INSTALLATION

### 2.1 Points To Consider

Plan your installation before mounting the Tube. The following should be considered for a successful installation.

- Weather conditions and ambient temperature of installation site.
- Appropriate cable lengths. Please consult your local Traxon™ office or authorized agent for necessary aid.
- The number of Monochrome Tubes and appropriate LED Engines.
- Any optional DMX2PWM Dimmers or DMX512 controllers to be used with the Monochrome Tubes.
- Distance between each Tube for thermal expansion and maintaining pixel pitch.
- There are two mounting methods to consider, plan mounting distances accordingly for whichever method is required.

#### 2.1.1 Installation Checklist

1. Prepare cables and all necessary accessories.
2. Perform functional check of Monochrome Tubes.
3. Ensure all pre-installation checks laid out below have been followed.
4. Mount the Monochrome Tubes on-site. If the installation is to be left uncompleted overnight, place all non-connected LED Engines and Monochrome Tubes in an indoor environment.



Ensure all the Interconnection Cables, Monochrome Tubes and LED Engines are initially stored in a dry area to guarantee the complete sealing of the system from water before installation.

## 2.2 Pre-Installation Checks

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### 2.2.1 Requirements of Cable Bending

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To reduce stress induced on Monochrome Tube lead cables, please adhere to the Minimum Bending Radius of 10mm (0.39").

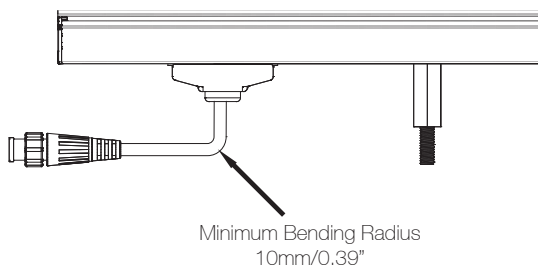


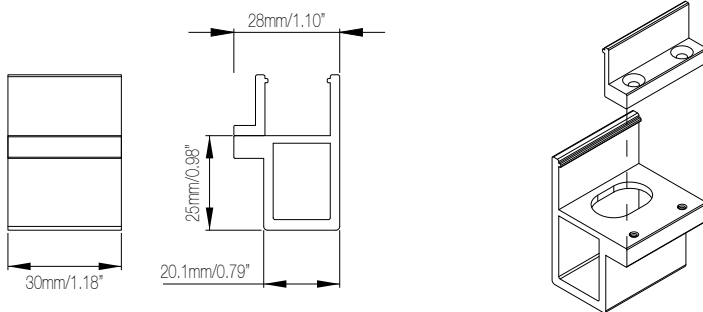
FIG.3: Cable Bending



Water ingress incurred due to excess cable bending will not be under warranty by Traxon Technologies.

## 2.2.2 Mounting Bracket (Optional)

If the optional Mounting Bracket method of installation is used, it is recommended to fix it to the installation surface before the Monochrome Tube is secured to the bracket. Mounting Bracket is ordered separately (TU.AC.0100400).



## 2.2.3 Installation Sequence

1. Plan for any possible bending of cables (see above).
2. Measure the correct distances for Mounting Brackets.
3. Connect Monochrome Tubes with LED Engines in the daisy-chain manner outlined in the Wiring Diagram (P. 14) to form large installations.
4. Perform functional check on all Monochrome Tubes and inspect cables and Mounting Bracket for any damage. Check for any abnormalities with the control signal.
5. Report any functional defect found to your nearest Traxon Technologies office. DO NOT attempt to install Monochrome Tubes with functional defects on-site.



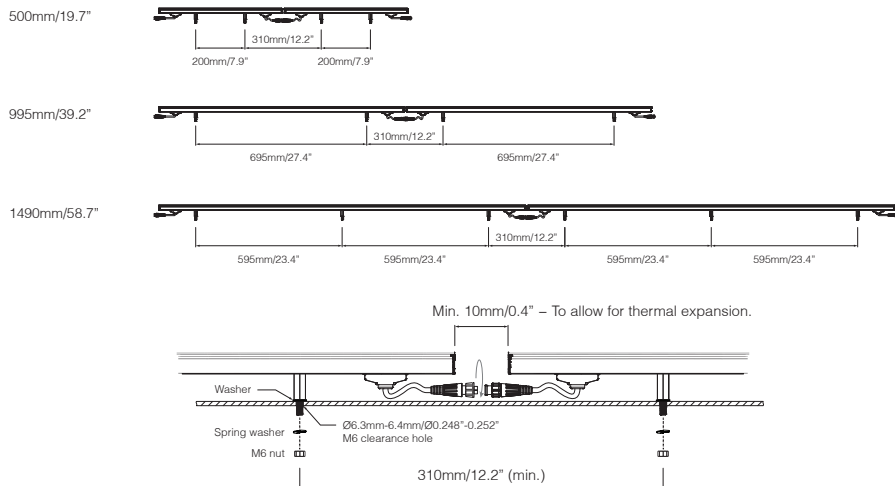
## 2.3 On-Site Installation



- DO NOT attempt installation in wet or severe weather conditions.
- DO NOT leave and expose any Monochrome Tubes or LED Engines unconnected under wet/raining or snowing environment.
- IP failure induced by stressed/damaged cables during or after installation will not be under warranty by Traxon Technologies.
- ALWAYS keep the cables protected from sharp objects and ensure no damage is generated on the cables.
- Failure to keep Monochrome Tube within the operating temperature range of  $-20^{\circ}\text{C}$  to  $50^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$  to  $122^{\circ}\text{F}$ ) and storage temperature range of  $-40^{\circ}\text{C}$  to  $70^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$  to  $158^{\circ}\text{F}$ ) will void the product's warranty.

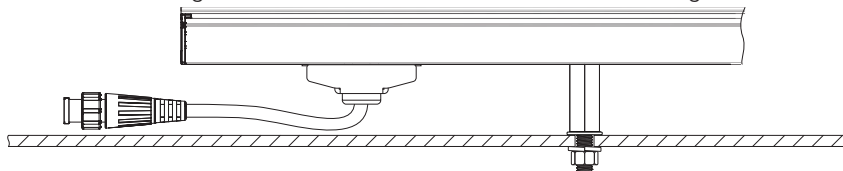
1. There are two options for mounting the Monochrome Tube, Mounting Studs that are pre-installed on the Tube and optional Mounting Brackets.
  - a. Measure out and mark up distances to affix the Monochrome Tubes. Ensure there is a minimum distance of 10mm between Monochrome Tubes to allow for thermal expansion (see FIG 4).

FIG.4: Mounting in a straight line via Mounting Stud method



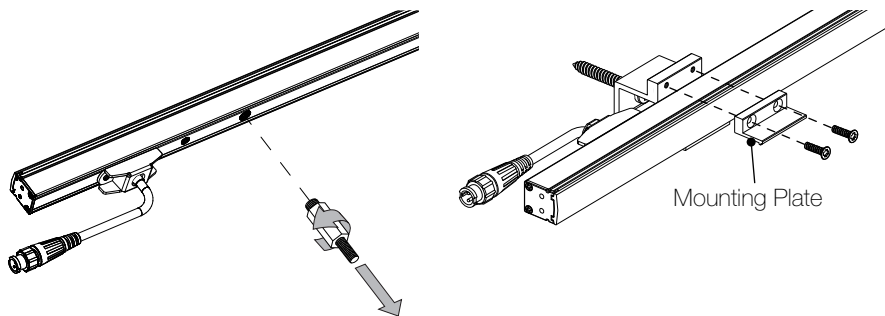
- b. Attach Monochrome Tubes to installation surface and secure with M6 nuts and washers (see below figure).

FIG.5: Mounting Monochrome Tube to surface via Mounting Stud method



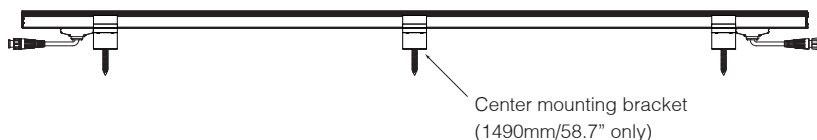
3. To mount using the Mounting Bracket, first remove the Mounting Stud as shown. Then affix Mounting Bracket to the installation surface and secure Monochrome Tube by fixing the Mounting Plate to the bracket.

FIG.6: Fixing the Mounting Bracket to Installation Surface



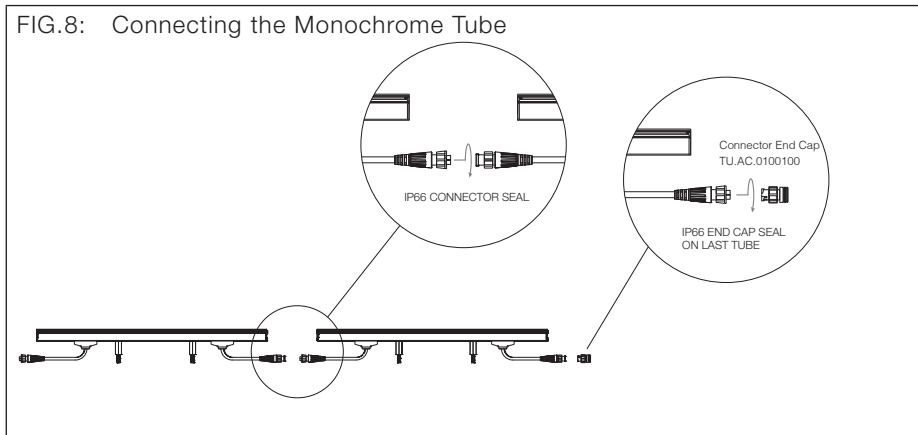
4. The Mounting Brackets should be placed either end of the Monochrome Tube. For the 1490mm Tube, further support should be added around the center of the Tube (see below figure). Ensure there is a minimum distance of 10mm between Monochrome Tubes to allow for thermal expansion (see FIG 4).

FIG.7: Extra Mounting Bracket for longer Tubes



5. Connect Tubes in the daisy-chained manner as detailed in the Wiring Diagram. Always affix a Waterproof Connector End Cap (sold separately) for the OUT connector of the final Tube in each daisy chain (see below figure).

FIG.8: Connecting the Monochrome Tube



6. The first profile of the daisy-chain group has to be connected to the control system via the starter cable.
7. Starter cables, Data and Power cables have to be installed through conduits/trunking.
8. Set up the control system indoors as detailed in the Wiring Diagram and connect to the Monochrome Tubes outside. Start up each unit and verify correct function.

## 3. SAFETY AND OPERATION

1. CAUTION - Unplug the power supply from the mains power before connecting any cables as this can damage the products.
2. CAUTION - Avoid looking directly into the LED light source at close range for your own safety.
3. Persons installing this products should make sure:
  1. The installation complies with all applicable codes, state and local laws, ordinances, standards and safety regulations.
  2. The installation environment is carefully studied and suitable surge protection measure(s) is taken.
  3. He or she is qualified for the handling of electrical equipment.
4. Do not attempt to install or use the product until installation instructions and safety labels are fully understood. This product is designed for indoor and outdoor use.
5. Ensure product operates within the specified temperature range. (Refer to 6. TECHNICAL SPECIFICATION for more details.)
6. Do not attempt to open the product. Not user serviceable.
7. Do not use the product if any part of it, or the power cables are damaged.
8. Only use product for specified voltage, do not exceed. (Refer to 6. TECHNICAL SPECIFICATION for more details.)
9. Always maintain connection to ensure waterproofing.
10. If the product has been subjected to drastic temperature variances, for example, following transportation, do not connect the fixture until it has reached room temperature, as moisture condensation may cause electric shock and product damages.
11. When installing the products and system power supplies, please ensure they will not be exposed to moisture and extreme heat (and direct sunlight for outdoor products). Besides, keep a clean operating environment for the fixtures and system power supplies.
12. Please study this Installation Guide thoroughly and check the latest Technical Specification Sheets available from the Traxon website [www.traxontechnologies.com](http://www.traxontechnologies.com) before setup.
13. Any non-compliance of the Installation Guide will void the Traxon warranty.

4. SYSTEM CONFIGURATION

4.1 Monochrome Tube Connection Components

The Monochrome Tube is connected using a daisy chain system with power and data on the same cable. FIG 9 shows some typical components for the Monochrome Tube System.

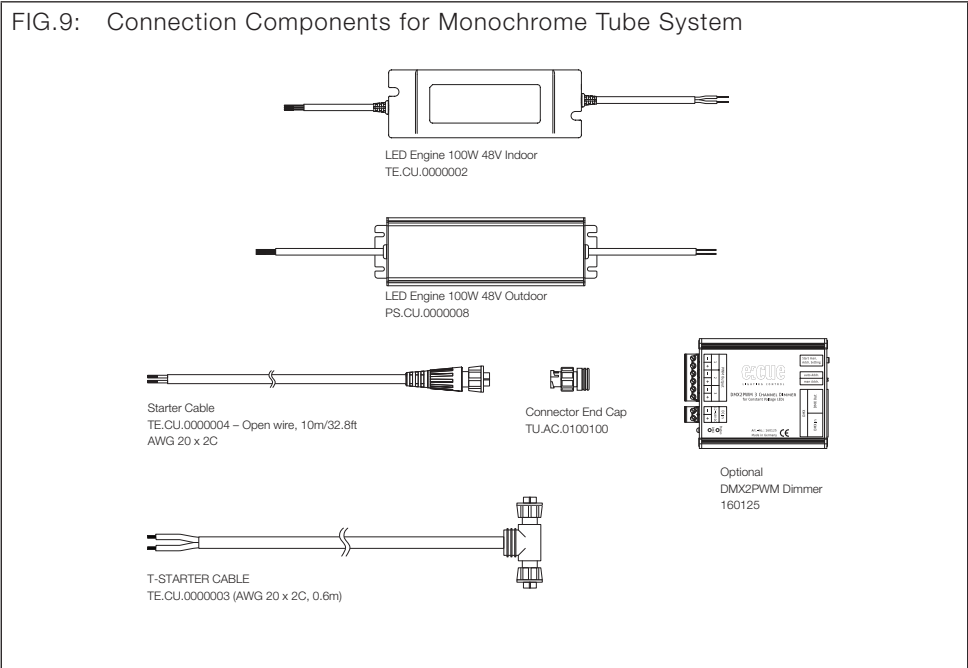


FIG.10: Monochrome Tube Typical Connection Example

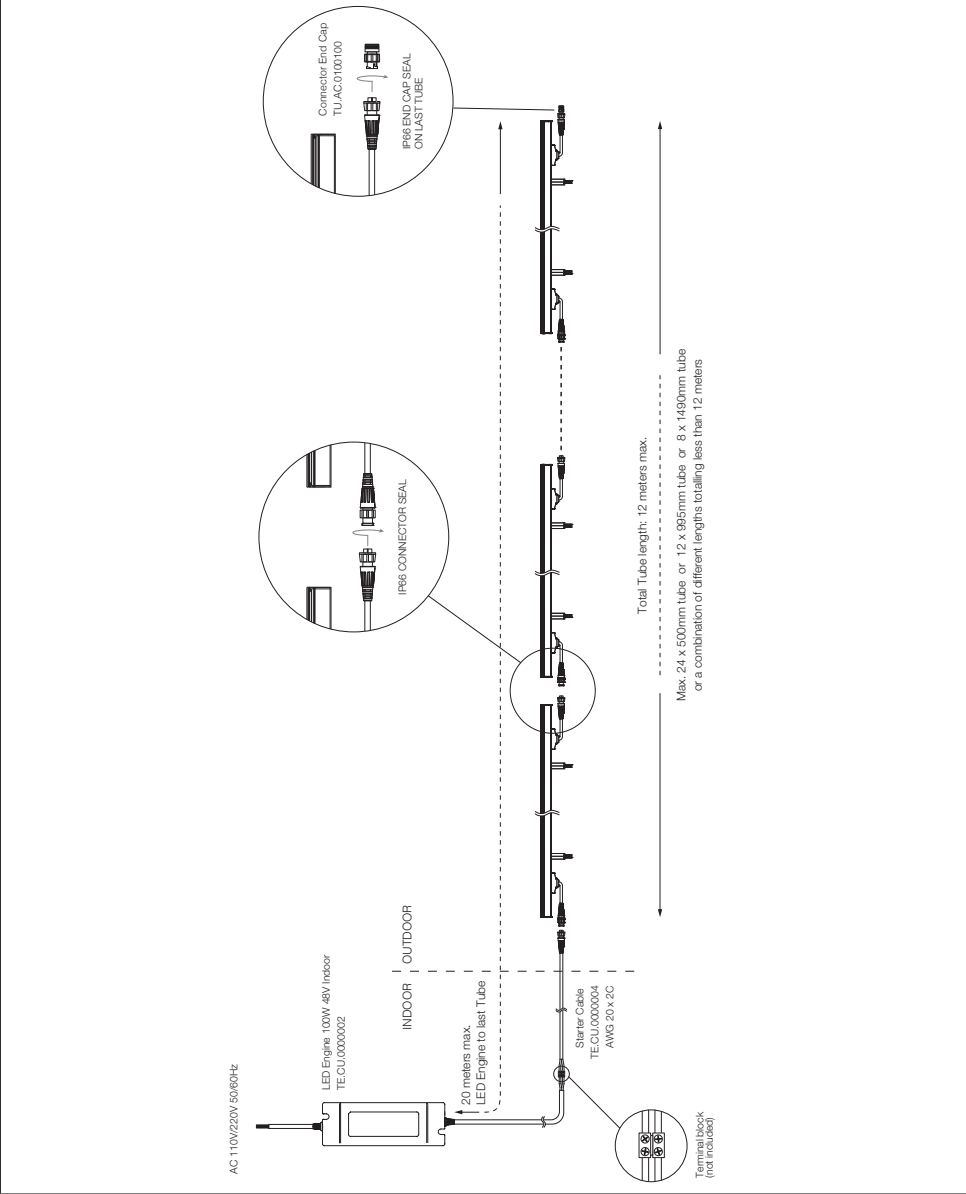


FIG.11: Optional Monochrome Tube Connection Example with T- Starter Cable

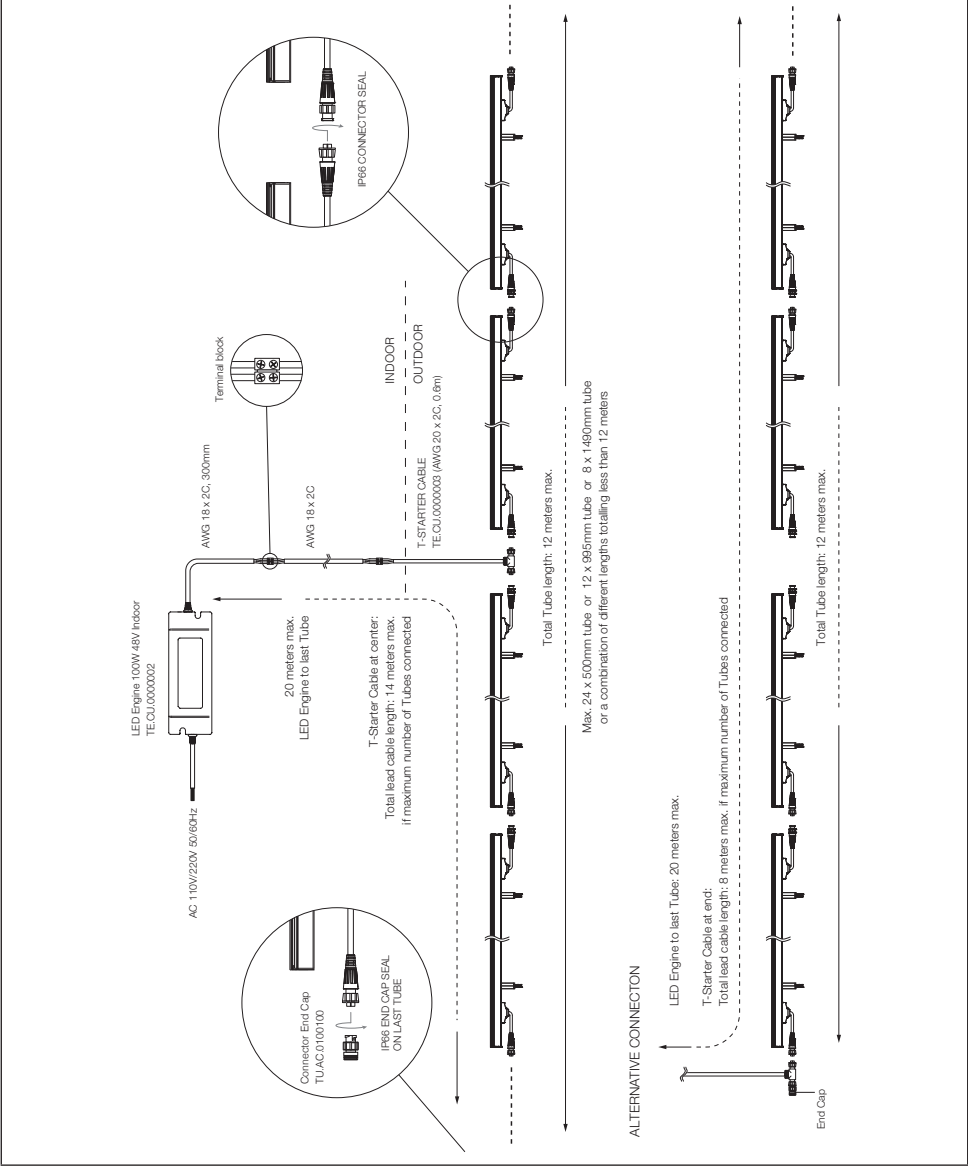
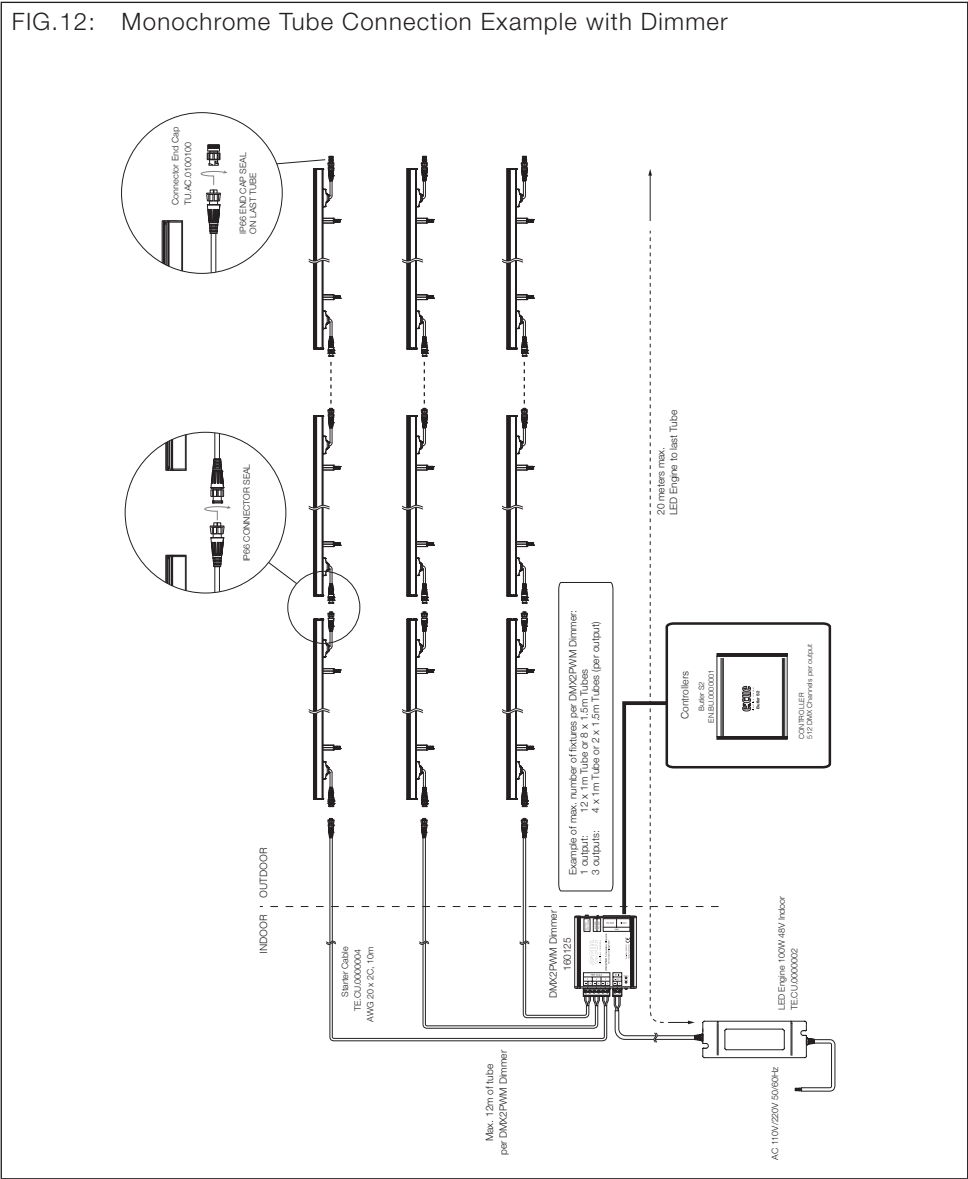


FIG.12: Monochrome Tube Connection Example with Dimmer





## 5. CARE AND MAINTENANCE

Traxon™ products are of superior design and quality and should be treated with care. The recommendations below will help fulfill any warranty obligations and gain good use and longevity from the products.

- Do not attempt or use the product(s) until you read and understand the installation instructions. Failure to adhere to these instructions could result in serious injury or property damage.
- Do not use product(s) if cables are damaged.
- Do not connect cables and connectors when wet or in wet area. Moisture on bare connectors can cause electric shock and damage to product(s).
- Do not use product(s) in extreme heat environment. Ensure there is sufficient airflow and use cool air circulation if required.
- Do not drop, knock, or shake product(s). Rough handling can damage the electronics and void the warranty.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean products. Wipe with a damp cloth on housings and a dry cloth on electronics to remove dirt or dust.
- Do not attempt to service or repair the product(s) unless done by an authorized service personnel. Contact your local Traxon office or distributor for details.
- If the product is not working as specified, please contact your nearest authorized service center or Traxon Technologies office for assistance.

6. TECHNICAL SPECIFICATION

Monochrome Tube	
Light Source:	48 / 96 / 144 High intensity SMD white LEDs
Beam Angle:	approx. 110°
Power Input*:	48V DC
Power Consumption:	3.7W max. / 7.5W max. / 11W max.
Weight:	0.27kg (0.59lbs) / 0.52kg(1.14lbs) / 0.75kg(1.65lbs)
Operating Temperature:	-30°C to 50°C (-4°F to 122°F)
Storage Temperature:	-40°C to 70°C (-40°F to 158°F)

\*For use with TRAXON LED Engine 100W 48V Indoor (TE.CU.0000002), LED Engine 100W 48V Outdoor (PS.CU.0000008) power units.

As with all electronic devices, LED output degrades over time - a term called lumen depreciation. This also explains why it is nearly impossible to expect photometric performances of two LED products with different service life spans to be the same. The rate of LED degradation is a complex function of many factors such as operating efficiency, duration of continuous operation, and operating conditions (e.g. ambient temperature).

Because LEDs are semiconductor devices, their performances are subject to inherent variability commonly found in semiconductor industry. To improve consistency in performance across the same product, LED manufacturers “sort” LEDs into bins according to different preset parameters, such as forward driving voltage, illumination, etc. Whereas binning is a sorting function, it is not a correction process. Inherent variability in the manufacturing process always results in different binning distributions according to different production lots. Traxon uses automatically binned LEDs on its products, thereby minimizing output variations within the model range.

7. TROUBLESHOOTING



Caution: Ensure power supply is OFF when disconnecting / connecting cables.

Problem	Cause	Possible Solutions
Product does NOT light up after installation	Incorrect power connection	<ul style="list-style-type: none"><li>• Check Mains Power</li><li>• Check power supply leads and wire connections</li><li>• Ensure output wires are connected with proper polarity</li></ul>
Shadowing	Light source covered	<ul style="list-style-type: none"><li>• Check for cables, wires or unwanted debris covering LED light source</li></ul>
Modules are dim	Excess products connected	<ul style="list-style-type: none"><li>• Ensure the power supplies are not overloaded due to an excess of products connected</li></ul>
Flickering	Incorrect power input/ Excess products connected	<ul style="list-style-type: none"><li>• Ensure the input voltage is correct</li><li>• Ensure the power supplies are not overloaded due to an excess of products connected</li></ul>

If problems persist or the product is not working as specified, please contact your nearest authorized service center or Traxon Technologies office for assistance.

8. WARRANTY STATEMENT

Traxon Technologies warrants its Products against material or workmanship defects for a period of five (5) years from date of purchase, provided that the purchased items are used under the conditions stated in this user manual.

Please refer [www.traxontechnologies.com](http://www.traxontechnologies.com) for all warranty terms and conditions.

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