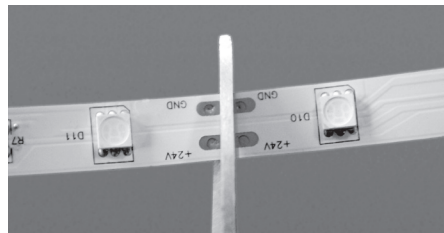


STEPS FOR INSTALLATION

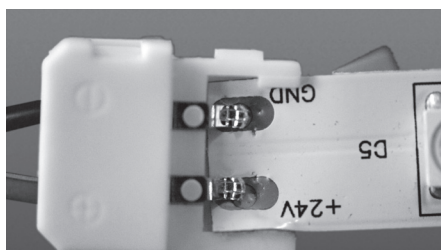
1. Shut off power supply at the lighting panel circuit before starting installation.
2. Measure the length of surface to which LED Tape Light will be installed.
3. LED Tape Light can be cut every 4" (101mm) for Standard Tape and every 6.5" (165mm) for LP, Low Power Tape. Be careful to use sharp cutting scissors and cut directly on the marked cutting line when cutting product to desired length. Cut pieces of LED Tape can be rejoined with our 15cm joiner or In-Line Connector.
4. Make sure surface to be mounted to is smooth and clean of any dust or oils. Gently pull backing off of self adhesive on back of LED Tape Light.
5. Push down gently on tape portion of LED Tape Light to assure a firm adhesion to mounting surface being careful not to damage LEDs during this process.
6. For porous surfaces that will not allow a firm grip with the self adhesive backing, we recommend that you use clear 3/8" U channel (NSL Part # LTP-010-S) which can be screwed to the surface first. The LED Tape Light can then be mounted inside the U channel. Also available for mounting to surfaces that will accept screws or nails are our mounting clips (NSL Part # LV-FS-MC-004).

NOTE: Maximum single run is 20' for Standard Tape, 40' for LP, Low Power Tape and 16' for CCT Color Adjust Series.

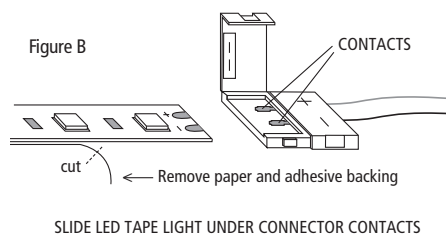


CONNECTING LED TAPE TO LOW VOLTAGE POWER SUPPLY

1. NSL LED Tape Light runs on class 2, 24 Volt power supply. Use only power supplies from NSL listed in these instructions. Be sure to match appropriate power supply to length of LED Tape Light being used and observe maximum and minimum load requirements.
2. **Connecting new roll of LED Tape Light to Power:** Connect one end of LED Tape with power feed connector to low voltage (24V) side of power supply noting + and - markings on LED Tape. Make sure to use appropriate size power supply for length of material. Maximum run is 20' for Standard Tape, 40' for LP, Low Power Tape and 16' for CCT Color adjust series.
 - A. Peel back adhesive tape covering approx. 1" from end of LED Tape.
 - B. Insert cut end of LED Tape with copper contacts facing up so that they slide underneath the tinned metal contacts in the power feed connector. This is important to ensure a solid connection.
 - C. Close the top portion of the power feed connector so it snaps shut onto the bottom half of the connector.



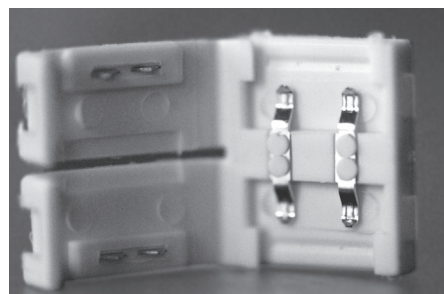
NOTE: Figure B shows the standard polarity connection for the power cord with the "+" on the right side looking down the LED Tape Light. The power cord for this connection is the LTP-001-6R. If you need to connect a power cord to the opposite end, the "+" would be on the left side. The power cord for this connection is the LTP-001-6L.



When connecting power to a piece of LED Tape that has been previously cut, attach power feed connector (NSL Part # LTP-001-6R) to cut section of LED Tape as follows:

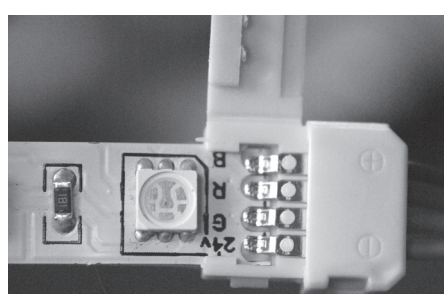
CONNECTING 2 PIECES OF LED TAPE TOGETHER

1. Using NSL Part #LTP-002 or LTP-STP-6IN follow steps 1 – 5 as explained above in "CONNECTING LED Tape Light POWER SUPPLY" and repeat for both sides of connector to the two pieces of LED Tape you are joining together.



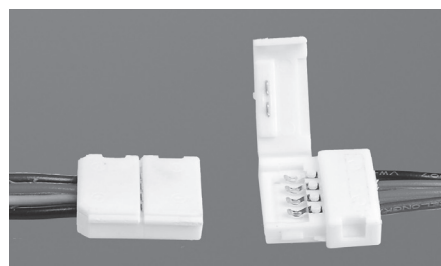
2. If one section fails to energize, check connection between lit section of LED Tape and unlit section.

NOTE: When connecting RGB LED Tape to power supply and connecting two pieces of RGB strip together, follow same steps as above with appropriate RGB connectors:

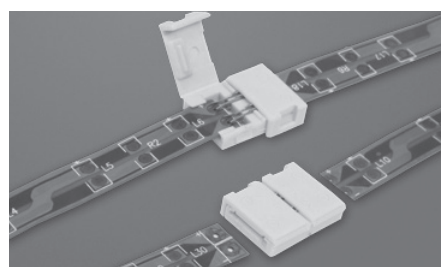


3. Connect wires from power feed connector to low voltage side of power supply.
4. Connect low voltage power supply to main (120 Volt).
5. LED Tape Light will energize within 10 seconds of turning on power supply. If entire length does not turn on, check connection of LED Tape Light to low voltage side of power supply. Check line voltage connection to power supply if necessary.

NOTE: Do not connect power to both ends of product as this could produce a fire hazard. Connect power to only one end of LED Tape Light products. 120 volt connections to power supply should be carried out by a qualified electrician.



LTP-001-RGB-6R
72" power feed connector for RGB indoor.



LTP-002-RGB
In-line connector for RGB Indoor



LTP-001-RGB-6IN
6" (15cm) in line connector for RGB indoor

CONTROL OF RGB LED TAPE LIGHT continued

NOTE: As LED Tape Light is powered by class 2, 24V power supplies, you will need one power supply and one controller for the first 20' run of LED Tape Light. A signal amplifier and additional class 2 power supply will be required for each additional 20' run of LED Tape Light.

1. Connect power feeds to RGB LED Tape Light as per instructions above.
2. Connect color coded wires from power feed connector to output side on Controller. The output side of the controller is marked +, R, G, B to match wire colors from power feed. The black wire on the power feed goes to the + terminal on the controller.



3. Connect input side of controller to appropriate size of 24V power supply from list of approved power supplies.

NOTE: Use only LEDDR-24-120W power supply when controlling RGB LED Tape. Do not use Dimmable power supplies for color change applications:

4. Connect line voltage side of power supply to line voltage.

NOTE: Line voltage connections should be carried out by a qualified electrician.

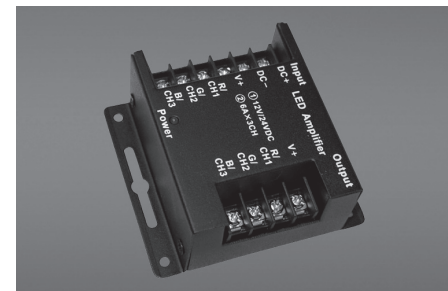
For Installations with multiple lengths of RGB LED Tape, you will need a signal amplifier for each additional run as follows:

1. Connect wires from output of controller to input side of signal amplifier. If continuing in a straight line, you may simply connect from the end of the previous piece of LED Tape to the input side of the signal amplifier by using power feed connector (NSL part # LTP-001-RGB-6R). If running wires directly from output of controller, we recommend using color coded wires of at least 18AWG.
2. Connect next LED Tape to output side of signal amplifier.

NOTE: Black wire on power feed connectors goes to + on both input and output of signal amplifier.

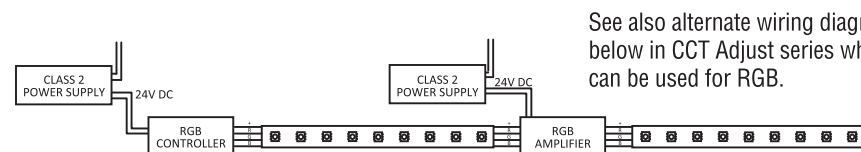
3. Connect Jack adaptor wires to low voltage side of class 2 power supply. We recommend using our LMSII-001 terminal block and junction box for this connection.

4. Connect primary side of power supply to mains voltage.



SUMMARY:

The RGB amplifier receives Pulse Width modulation (PWM) signal from the controller allowing you to do multiple runs from a single controller. They are powered individually by a class 2 power supply. The power supply should match the wattage of the length of LED Tape Light you are controlling.



See also alternate wiring diagram below in CCT Adjust series which can be used for RGB.

CONTROL OF CCT LED TAPE LIGHT

NOTE: As LED Tape Light is powered by class 2, 24V power supplies, you will need one power supply and one controller for the first 16' run of LED Tape Light. A signal amplifier and additional class 2 power supply will be required for each additional 16' run of LED Tape Light.

1. Connect color coded wires from power feed connector to output side on Controller. The output side of the controller is marked W, C, V+. Connect Red wire from power feed to W, green wire to either C and white wire to V+.



2. Connect input side of controller to appropriate size of 24V power supply from list of approved power supplies.

NOTE: Use only LEDDR-24-120W power supply when controlling CCT Adjust LED Tape. Do not use Dimmable power supplies for color change applications:

3. Connect line voltage side of power supply to line voltage.

NOTE: Line voltage connections should be carried out by a qualified electrician.

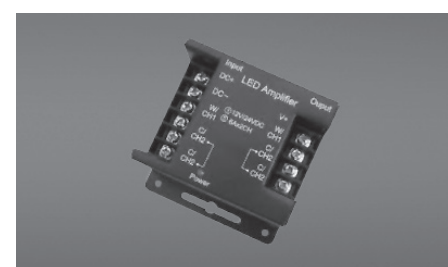
For Installations with multiple lengths of CCT LED Tape, you will need a signal amplifier for each additional run as follows:

1. Connect wires from output of controller to input side of signal amplifier.
2. Connect next LED Tape to output side of signal amplifier.

NOTE: White wire on power feed connectors goes to + on both input and output of signal amplifier.

3. Connect Jack adaptor wires to low voltage side of class 2 power supply. We recommend using our LMSII-001 terminal block and junction box for this connection.

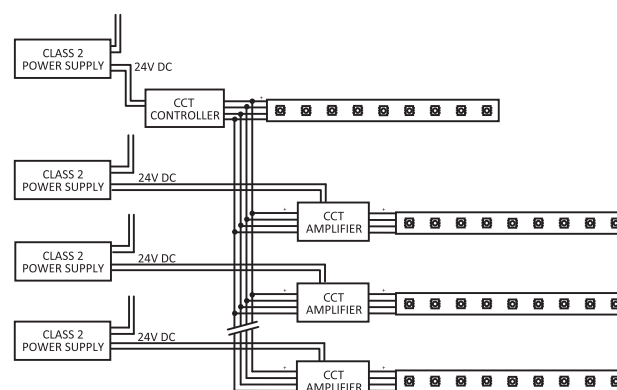
4. Connect primary side of power supply to mains voltage.



SUMMARY:

The CCT amplifier receives Pulse Width modulation (PWM) signal from the controller allowing you to do multiple runs from a single controller. They are powered individually by a class 2 power supply. The power supply should match the wattage of the length of LED Tape Light you are controlling.

NOTE: Controllers and amplifiers must be placed in weather proof outdoor enclosures for outdoor installations.



SPECIFICATIONS

Input Voltage	24V DC
Power Consumption	Standard Tape: 4.3W/FT LP, Low Power Tape: 2.2W/FT RGB color change series: 4.3W/FT CCT series: 5.8W/FT
LED Type	High power 5060 SMD LEDs 3528 SMD for CCT series
# of LEDs per foot (304mm)	18 for Standard Tape, 9 for LP, Low Power Tape, 36 for CCT series
Viewing Angle	120°
Efficacy	75 LPW Cool White 66 LPW Warm White 70 LPW CCT (average)
Average LED Life	50,000 hours to 70% initial lumen output
Color Temperature	6500K Cool White 3000K Warm White 2500K – 7000K CCT series
Custom Cuttability	Every 4" (102mm) for Standard Tape Every 6.5" (165mm) for LP, Low Power Tape CCT Adjust every 6 LED's (50mm)
Approvals Listing	cETLus

RGB AMPLIFIER TECHNICAL PARAMETERS

Working temperature	-20C – +60C
Supply voltage	Class 2, 24V
Output	3 channels
External dimensions	L 114mm x W 65mm x H 25mm
Net weight	110G
Static power consumption	< 1W
Efficacy	< 4A each channel
Maximum length of LED Tape per amplifier	20'

LED TAPE LIGHT POWER SUPPLIES

DIMMABLE DRIVERS

See the NSL catalogue for a list of compatible dimming systems.

TRE24L40DC

Max. recommended load 36W or 8' LED Tape, min. 8W or 2' LED Tape.
5.03" x 2.14" x 2" (127.76 x 54.36 x 50.80mm)

TRE24L96DC

Max. recommended load 90W or 20' LED Tape, min. 8W or 2' LED Tape
7.56" x 3.06" x 2.94" (192.02 x 77.72 x 74.68mm)

NOTE: Above maximum and minimum lengths are for Standard Tape. You may double these when using LP, Low Power Tape. For High Power or RGB Tape, maximum lengths shown must be multiplied by .45 due to higher power consumption.

WARNING AND CAUTIONS

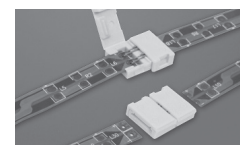
- Do not operate with the flexible light tightly coiled.
- During installation, make sure flexible light isn't receiving electricity in any manner.
- Make sure the voltage marked on your light strip matches the power supply.
- Do not overlap this product as the overlapping may cause the flexible light to overheat and melt or ignite.
- Do not puncture, cut, shorten, or splice the flexible lighting.
- Do not route flexible lighting through walls, doors, windows or any like part of the building structure. See wiring diagrams for remote power source installations.
- Do not use if there is any damage to the light or cord insulation. Inspect periodically.
- Do not submerge flexible light in liquids, or use the product in the vicinity of standing water or other liquids. Keep all parts of LED Tape Light installation at least 10 feet (305cm) from any swimming or decorative pool.
- Secure this flexible light using only the hangers or clips provided. Do not secure this product or its cord with staples, nails, or like means that may damage the insulation.
- Do not subject flexible lighting to continuous flexing.
- Do not exceed the length in feet permitted by the marking.
- Make sure to disconnect the power before adding segments.
- Only use extension segments provided with the entire set of product.
- To preclude the entry of water, make sure that all connections between section segments are secure.
- Do not bend the LED Tape Light in the horizontal plane at all. Use "T", "+", "L", or step cords instead. Maintain a minimum 2" (5.1cm) radius in the vertical plane.
- Do not subject flexible light to over 15 lbs. of tensile force.
- When connecting the flexible light with connectors, step cord, and the power supply (LED driver), make sure the polarity markings are correctly matched.
- When using outdoor use portable lighting products, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and personal injury, including the following:
 - Ground Fault Circuit Interrupter (GFCI) protection should be provided on the circuits or outlet to be used for the outdoor use of flexible lighting product. Receptables are available having built-in GFCI protection for this measure of safety.
 - Use only listed outdoor extension cord from 110VAC source to LED Driver, such as type SW, SOW, STW, STOW, SJW, SJOW, SJTW, or SJTOW. This designation is marked on the wire of the extension cord.

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ACCESSORIES



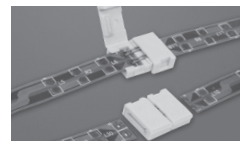
LTP-001-6R / LTP-001-12R
6' OR 12' Power feed connector for single color indoor. Add "-O" to code for opposite end, add "-CM" for through wall connections.
LTP-001-CCT-6
6' Power feed connector for CCT series indoor.



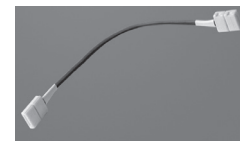
LTP-002
In-line connector for single color indoor
LTP-002-CCT
In Line Connector for CCT Color Adjust



LTP-001-RGB-6R
72' Power feed connector for RGB indoor. Add "-O" for opposite end.



LTP-002-RGB
In-line connector for RGB indoor.



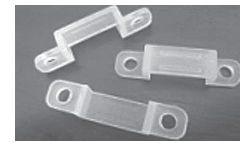
LTP-STP-6IN 5.9' (15cm)
LTP-STP-2IN 2' (5cm)
In line connector for single color indoor.



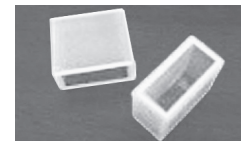
LTP-001-RGB-6IN 5.9' (15cm)
LTP-001-RGB-2IN 2' (5cm)
In line connector for RGB indoor.



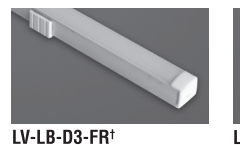
LMSII-001
Terminal block and junction box for connection to additional lengths of power cable if needed.



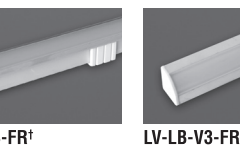
LV-FS-MC-004
Mounting Clips.



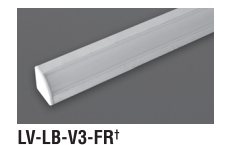
LV-FS-EC-001
End Caps.



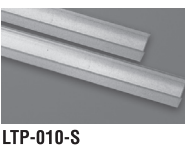
LV-LB-D3-FR+
Surface mounted Aluminum Extrusion and Frosted PC Cover.



LV-LB-W3-FR+
Recessed Aluminum Extrusion and Frosted PC Cover.



LV-LB-V3-FR+
Corner surface mounted Aluminum Extrusion and Frosted PC Cover.



LTP-010-S
4' plastic mounting channel with predrilled screws.



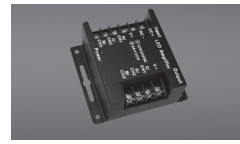
LT-09S-RF
3 channel controller for RGB Tape Light*



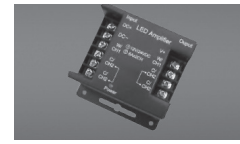
LT-031-RF
CCT LED Tape Light Controller



LT-032-RF
6 key dimming controller



LT-390A
Signal amplifier for LED Tape Light 150W, 24V



LT-290A
Signal amplifier for CCT LED Tape Light

† Extrusions come in 39.37" (1 metre) lengths. End caps and mounting clips are available, sold separately.

INSTALLATION AND SAFETY INSTRUCTIONS

LED Tape Light

INDOOR



Applications

- Aisle and stairway lighting
- Cabinet and Cove lighting
- Back lighting
- Showcase lighting
- Linear decorative lighting

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