GE
Lighting

Installation Guide

24 Volt

Tetra® Contour

LED Lighting System

(GEXNBL-1, GEXNGL-1, GEXNYG-1, GEXNRC-1, GEXNRD-1, GEXN65-1, GEXN32-1)

STOP

BEFORE YOU BEGIN

Read these instructions completely and carefully.

⚠ WARNING/AVERTISSEMENT

RISK OF ELECTRIC SHOCK:
- Disconnect power at fuse box or circuit breaker before servicing or installing product.
- Properly ground Tetra® power supply.

RISK OF FIRE:
- Use only Tetra® supply wire to make connection from Tetra® power supply to Tetra® LED strip.
- Use only approved wire for input/output connection. Minimum size 18 AWG (0.82mm²)
- Follow all local codes.

RISQUES DE DÉCHARGES ÉLECTRIQUES
- Coupez l'alimentation électrique à la boîte de fusibles ou au disjoncteur avant l'entretien ou l'installation du produit.
- Assurez-vous de correctement mettre à terre l'alimentation électrique Tetra®.

RISQUES D'INCENDIE
- N'utilisez que le fil d'approvisionnement Tetra® pour faire la connexion entre l'alimentation Tetra® et la bande DEL Tetra®.
- N'utilisez que des fils approuvés pour les entrées/sorties de connexion. Taille minimum 18 AWG (0.82mm²).
- Respectez tous les codes locaux.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

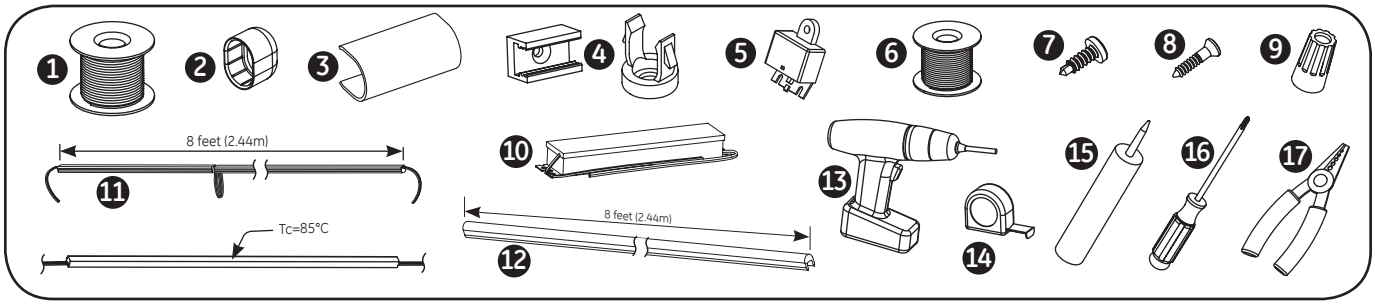
Save These Instructions

Use only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer.

Prepare Electrical Wiring

Electrical Requirements
- Limited to use in dry and damp locations.
- The grounding and bonding of the LED Driver shall be done in accordance with National Electric Code (NEC) Article 600.
- Follow all National Electric Codes (NEC) and local codes.
- These products are only suitable for connection to a circuit from a Class 2 power source. These products have not been evaluated for use when connected to a power source that does not comply with Class 2 voltage and energy limited supplies.

Components and Tools required:



1. UL approved 18 AWG (0.82mm²) supply wire
2. End caps
3. Light guide connectors
4. Mounting clips
5. Weather box
6. 22 AWG (0.33mm²) tie-wire
7. #6, #8 or #10 (M2, M3 or M4) self drilling pan headed screws
8. #6 (M2) screws
9. UL approved 22-14 AWG (0.33-2.08mm²) twist-on wire connectors
10. Tetra® 24 Volt Power Supply
11. Tetra® Contour light engine
12. Tetra® Contour light guide
13. Cordless drill
14. Tape measure
15. Electrical grade silicone
16. Screwdriver
17. Wire stripper/cutter

imagination at work

Attaching Light Engines

Plan the layout by measuring the design layout and dividing by 8 ft. (2.44m) to determine the required quantity of Tetra Contour. Refer to the Cutting Resolution Chart at right when cutting any Tetra Contour section.

NOTE: Do not use more than one suffix code for each respective application, as mixing suffix codes may result in appearance variation. Suffix code can be found on the packaging label.

Cutting Resolution Table

Light Engine Color	Cutting Resolution
Red	2.29 in. (58 mm)
Red-orange	2.29 in. (58 mm)
Amber	2.29 in. (58 mm)
Green	2.29 in. (58 mm)
Blue	2.29 in. (58 mm)
White	2.00 in. (51 mm)
Warm White	2.00 in. (51 mm)

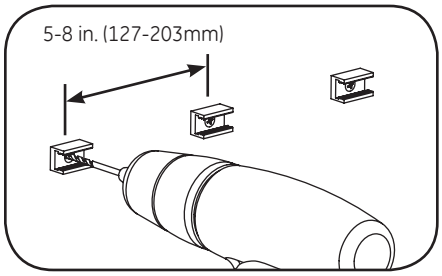
METHOD A - without light guides

⚠ CAUTION

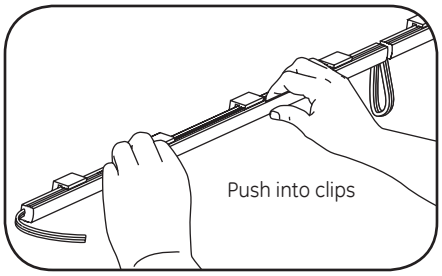
Risk of damage. Light engine by itself is intended for use in dry indoor application only.

NOTE: Installation methods shown are for straight runs. For custom shapes, install mounting clips at regular intervals throughout the shape to provide adequate support for the light engine.

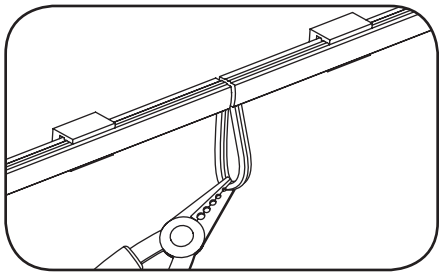
NOTE: **DO NOT** bend the light engine to an inside radius that is tighter than 5/8 in. (16mm). The light engine is not intended for excessive or repetitive bending.



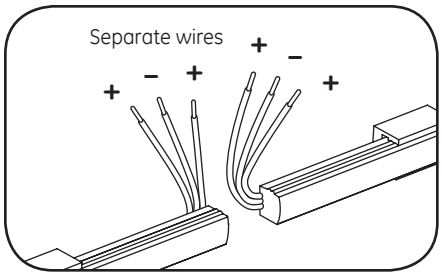
1. Install a mounting clip, using #6 (M2) counter sink screws, every 5–8 inches (127–203mm) on center until the end of the run is reached.



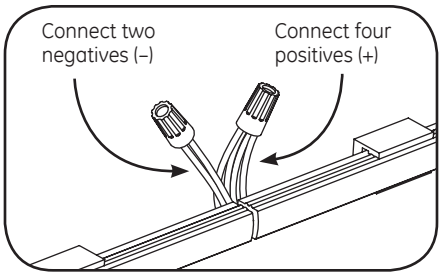
2. Push each 16 in. (406mm) light engine segment into the clips. Fold loose wires behind light engines.



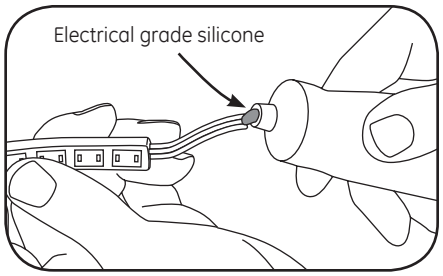
3. If required, cut wire loops between sections or through light engine in the appropriate area (refer to the Cutting Resolution table above).



4. Separate wires and identify outer conductors as positive (+) and middle conductors as negative (–). Strip ends back 0.5 in. (13mm).



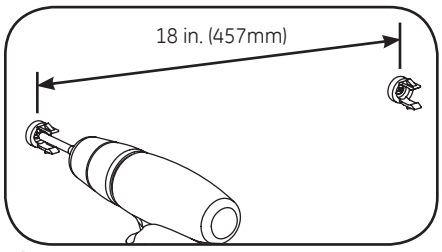
5. Use twist-on wire connectors to join cut wires together. Fold wires behind light engines.



6. ***CAUTION:*** Anytime light engine or supply wire is cut and/or wire is exposed, electrical grade silicone must be applied (see list on the next page for recommendations).

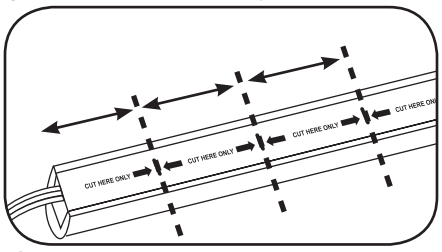
METHOD B - with light guides

NOTE: Installation methods shown are for straight runs. For custom shapes, refer to the **Light Guide Forming Instructions.**

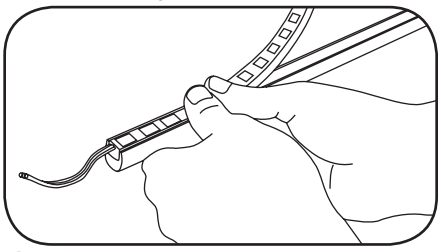


1. Install a minimum of one clip per 18 in. (457mm) using #10 (M4) screws.

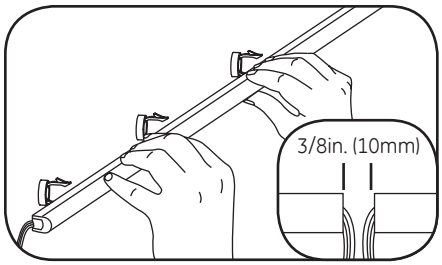
   NOTE: Standard neon hardware can also be used.



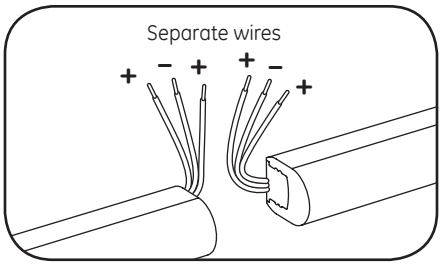
2. If required, cut wire loops between sections or through light engine (refer to the Cutting Resolution table above).



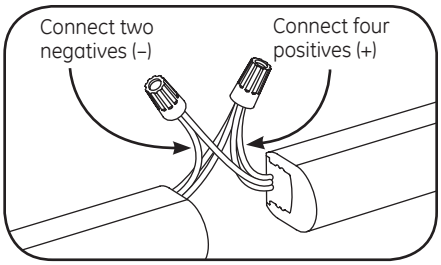
3. Push the light engine segments down into the light guide.



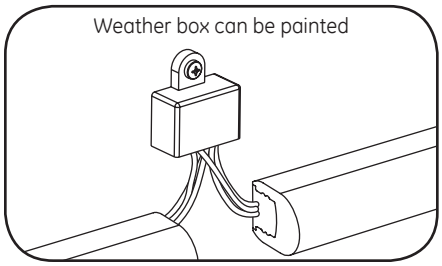
4 Attach Tetra Contour to the mounting clips, leaving a 3/8 in. (10mm) gap between sections to allow for expansion or contraction. Secure light guide by twisting tie-wire around the mounting clip and light guide.



5 Separate wires and identify outer conductors as positive (+) and middle conductors as negative (–). Strip ends back 0.5 in. (13mm).

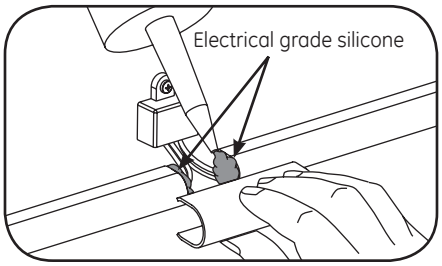


6 Use twist-on wire connectors to join wires together. Fold wires behind light engines.

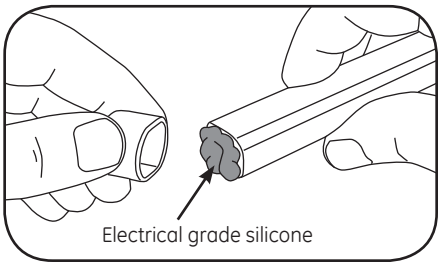


7 Insert wire connectors into weather box. Fill with electrical grade silicone and close box. Weather box can be mounted using #8 (M3) screws.

NOTE: Weather box is required for all outdoor electrical connections.



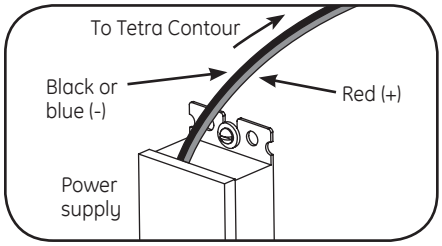
8 At each gap between Tetra Contour sections, snap on a light guide connector.



9 At any open end, apply electrical grade silicone and press fit a light guide end cap to the Tetra Contour.

Example electrical grade silicones include: GE RTV 6700 Series Silicone Rubber Adhesive Sealant, GE White Blanc RTV 162 Silicone Rubber Adhesive Sealant-Electrical Grade, Dow Corning 3140 - Non-Corrosive Flowable (clear), Dow Corning 3145 - Non-Corrosive Nonflowable (clear or gray) & Dow Corning RTV 748 Non-Corrosive Sealant-White

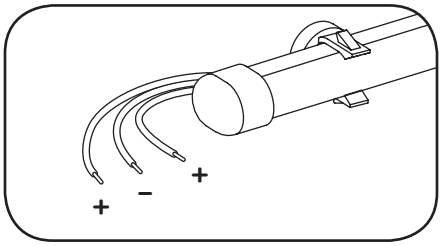
Connect Power Supply



1 Run a wire from the power supply to a section of Tetra Contour.

NOTE: Power supply connection must be completed in an acceptable UL/NEMA enclosure.

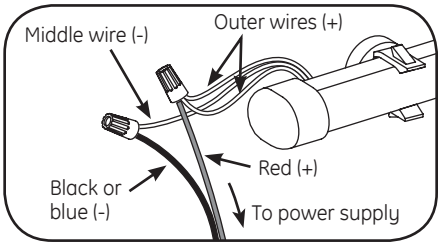
NOTE: Power supply loading is described in the power supply installation instructions.



2 Separate wires and identify outer conductors as positive (+) and middle conductor as negative (-). Strip ends back 0.5 in. (13mm).

⚠ WARNING

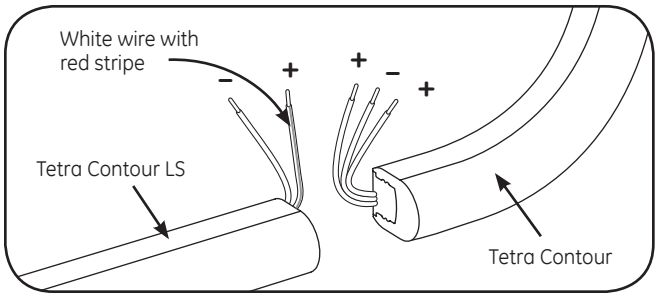
Risk of electrical shock. Turn power OFF before inspection, installation or removal.



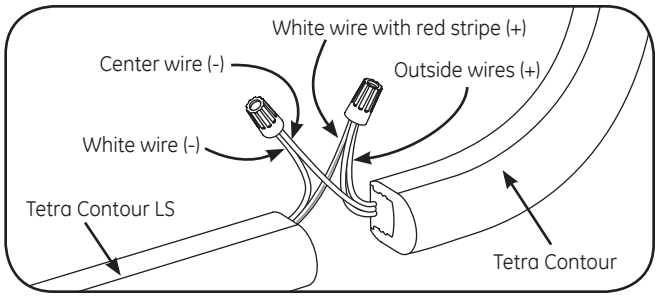
3 Connect the two outer wires (+) from the LED strip to the red wire (+) of the power supply. Connect the middle wire (-) from the LED strip to the black or blue wire (-) of the power supply.

NOTE: Grounding and bonding must be done in accordance with National Electrical Code (Article 600). See power supply instructions.

Optional–Attaching Tetra Contour LS to Tetra Contour



1 Tetra Contour LS can be connected to formable Tetra Contour for custom shapes. Separate wires and identify conductors as positive (+) and negative (–). Strip ends back 0.5 in. (13mm).



2 Splice the white wire with red stripe (+) of Tetra Contour LS to the two outside wires (+) of Tetra Contour and splice the white wire (-) of Tetra Contour LS to the center wire (-) of Tetra Contour. Insert wire connectors into weather box. Fill with electrical grade silicone and close box.

Retrofit Instructions

1. ***(Existing Signs Only)*** Prior to installation, survey the site for information regarding power and accessibility inside and outside the building. Ensure that the branch circuit supplying the existing transformer or ballast will be within the voltage ratings of the new LED power supply, and have a current rating not exceeding 20A, or that permitted by applicable local, state, or country electrical codes (whichever is less).
2. ***(Existing Signs Only)*** Remove the existing lighting equipment to be replaced, such as neon tubing or fluorescent tubes; and associated transformers and ballasts. Care should be taken not to break the existing neon or fluorescent tubes.

   NOTE: Follow all federal and local regulations when disposing of neon tubing, fluorescent tubes, transformers and ballasts.
3. ***(Existing Signs Only)*** If removal of the existing lighting equipment eliminates the disconnect switch, as required by applicable local, state, or country electrical codes; a new disconnect switch must be installed.
4. ***(Existing Signs Only)*** Make sure the removal of lighting equipment does not compromise the integrity of the sign body (i.e. water intrusion). Fill in all holes 0.5 in. (13 mm) or smaller with the appropriate amount of rated caulk or sealant. For holes greater than 0.5 in. (13 mm), use an aluminum or zinc coated steel patch with rivets and sealant.
5. Using the layout guidelines above, determine required number of LED modules required to illuminate the sign.
6. A Tetra® 24VDC Class 2 Power Supply, as listed below, must be used with this retrofit kit. Determine the number of Tetra® Class 2 Power Supplies required to power the number of LED modules required to illuminate the sign, so as not to overload the Tetra® Class 2 Power Supply chosen.
7. Follow the instructions above to properly mount the LED modules.
8. Connect the DC output of the power supply to the LED modules using the Electrical Connections instructions above.
9. Connect the power unit to the supply in accordance with the applicable local, state, and country electrical codes, and the instructions found in the power supply installation guide.
10. If required, the disconnect switch shall be installed by qualified personnel, in accordance with applicable local, state, and country electrical codes.

Troubleshooting

Symptom	Condition	Solution
All LEDs are OFF	No AC input.	Attach AC input and/or check circuit breaker.
	Incorrect wire attachment.	Check wire connection(s) at the Tetra Contour LED light engine and power supply for improper connections or short circuits. Make sure you have positive to positive and negative to negative wire connections.
Some LEDs appear dim	Overload (maximum load exceeded).	Ensure the overall length of Tetra Contour LED light engine does not exceed the maximum load as detailed in the ***Tetra Power Supply Installation Instructions.***
	Maximum recommended supply wire length exceeded.	Reduce the length of supply wire equal to or below the recommended maximum.
	Mixed Suffix Codes of LED light engine within an application.	Make sure that all LED light engines have the same Suffix Code (Suffix Code is located on each packaging label).
Some of the sections are not illuminated	Incorrect wire attachment.	Check the wire connections at the Tetra Contour LED light engine for improper connections. Make sure you have positive to positive and negative to negative wire connections. Check for improper cutting resolution locations (see Method B step 2).
Light/dark banding along a section	LED light engine stretched during installation.	Remove LED light engine and properly install.

Specifications

Maximum Loading per Tetra® 24 VDC Power Supply

SKU	Rating	20W Power Supply *Note: Load shall not exceed 0.83A*	80W Power Supply *Note: Load shall not exceed 3.3A*	100W Power Supply *Note: Load shall not exceed 4.1A*	180W Power Supply *Note: Load shall not exceed 3.8A per each (of 2) output channels*
GEXNRD-1, GEXNBL-1, GEXNGL-1	24VDC, 1.52W/ft. (Strip) 1.79W/ft. (System)	12 ft. (3.66 m)	50 ft. (15.24 m)	59 ft. (17.9 m)	55 ft. (16.76 m) per output channel 110 ft. (33.53 m) per power supply
GEXNYG-1, GEXNRC-1	24VDC, 2.27W/ft. (Strip) 2.67W/ft. (System)	8 ft. (2.44 m)	33 ft. (10.06 m)	40 ft. (12.19 m)	37 ft. (11.28 m) per output channel 74 ft. (22.55 m) per power supply
GEXN65-1, GEXN32-1	24VDC, 3.17W/ft. (Strip) 3.73W/ft. (System)	6 ft. (1.83 m)	24 ft. (7.3 m)	29 ft. (8.8 m)	27 ft. (8.2 m) per output channel 54 ft. (16.4 m) per power supply

Maximum Remote Mounting Distance

	18 AWG/0.82 mm² Supply Wire	16 AWG/1.31 mm² Supply Wire	14 AWG/2.08 mm² Supply Wire	12 AWG/3.31 mm² Supply Wire
20W Power Supply	20 ft./6.1 m	–	–	–
80W Power Supply	20 ft./6.1 m	30 ft./9.1 m	50 ft./15.2 m	86 ft./26.1 m
100W Power Supply	20 ft./6.1 m	30 ft./9.1 m	50 ft./15.2 m	86 ft./26.1 m
180W Power Supply	20 ft./6.1 m	30 ft./9.1 m	50 ft./15.2 m	86 ft./26.1 m

This product is intended solely for the use of non-residential signage lighting and is not intended for use in any other applications.

Conforms to the following standards:

GE Lighting • 1-888-MY-GE-LED **(1-888-69-43-533)** • www.gelighting.com

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