



Installation Manual

CS9300

Professional Series

Landscape Lighting System



CS9300 Professional Series Landscape Lighting System – pg. 1

READ THESE INSTRUCTIONS ENTIRELY BEFORE BEGINNING INSTALLATION!

Congratulations on your decision to purchase one of the finest quality landscape lighting systems on the market today. When properly installed and maintained, this system will provide years of trouble free service and allow you to illuminate your home like a professional. Just follow these easy steps to design and install the CS9300 system and any add-ons or upgrades you may have purchased. For additional help and information on installing your system, visit our web site at www.EasyAssemblyRequired.com.

WHAT'S INCLUDED:

4 each CS933A In-ground Well Lights	220 feet Landscape Cable 12/2 gauge
3 each CS936S Copper Area/Path Lights	2 each T- Connectors
2 each CS937S Copper Bullet Directional Lights	1 each Outdoor Timer with Photocell
1 each CS930T Pro-Series Transformer	1 each Stake Driver Cap (Installation Tool)

TOOLS REQUIRED/RECOMMENDED FOR INSTALLATION:

Screwdriver (Flat & Phillips Head)	Shovel
Wire Cutter	Hammer
Wire Stripper	100-Ft Measuring Tape
Pliers	Power Drill and Bits (3/16" bit for plastic anchors)

BASIC SYSTEM DESIGN STEPS:

- A.** Determine the location of the power transformer before installation and make sure a suitable 115/120VAC covered GFCI outlet marked "WET LOCATION" is within reach of the transformer power cord. Attach and secure transformer to the wall a minimum of 12 inches above ground using screws and anchors (if needed) provided.
- B.** Lay out the 12/2 gauge MAIN SUPPLY CABLE according to the **Easy Design Chart** on the next page, paying close attention to the **maximum wattage per run** depending on length of Main Supply Cable.
- C.** Use **T-CONNECTORS** to connect multiple lights to a single run of MAIN SUPPLY CABLE. **Always connect the luminaires to the T-Connector Cable (TCC) and not the Main Supply Cable** if 2 or more lights are connected to a single run.
- D.** **DO NOT EXCEED** 25 feet of cable from each side of the T-Connector (a total of 50 feet for the T-Connector Cable).
- E.** Install each luminaire according to the individual instruction sheets, **attach to the T-Connector Cable (TCC)** on Main Supply Cable and bury loose cable as desired (6 inches deep or less).
- F.** Plug **Power Transformer** into the **Timer with Photocell**, plug the timer into the GFCI outlet, and turn the Timer dial to the desired setting for Dusk/Dawn, or Dusk On/ Off in 2, 4, 6, or 8 hours.



CS9300 Professional Series Landscape Lighting System – pg. 2

Easy Design Chart

Use the Easy Design Chart to help determine the best way to wire your fixtures to create optimal results in the illumination of your home. Follow these simple rules for best results:

1. Use at least **2 MAIN SUPPLY CABLE** runs from the transformer for each 300 watt power bank to balance the load.

NOTE: The ideal wiring design for a 300 watt transformer is to have a minimum of **2 MAIN SUPPLY CABLE runs** of 50 feet or less with a **25 foot T-Connector Cable on each side of the T-Connector** (50 foot total max). Using this design, you can install lights up to 75 feet from the transformer (50' + 25') and add the following combinations of light fixtures to **each MAIN SUPPLY CABLE** run:

Type and Maximum Quantity of Light Fixtures	Location on T-Connector Cable (TCC)
4 each CS933A Well Lights only	2 on left side of TCC and 2 on right side of TCC
3 each CS933A Well Lights + 2 each other types	1 at center of TCC, 2 on left side, 2 on right side
2 each CS933A Well Lights + 3 each other types	1 at center of TCC, 2 on left side, 2 on right side
1 each CS933A Well Lights + 5 each other types	3 on left side of TCC and 3 on right side of TCC

2. **Install all luminaires (light fixtures) on the T-Connector Cable (TCC)** instead of the MAIN SUPPLY CABLE (unless only one luminaire is used on the run) and place a comparable number of fixtures/wattages on both sides of the T-Connector.
3. **DO NOT EXCEED the MAXIMUM WATTAGE** listed for each length of MAIN SUPPLY CABLE used or the voltage at the fixtures will be lower than required creating inadequate light output and may shorten the life of the lamps.
4. Use the **HIGH SETTING** on the transformer to optimize light output when all luminaires are used on this system. (See details in Transformer Installation Sheet)
5. **SHORTER lengths for the MAIN SUPPLY CABLE increases** the total wattage you can place on the T-Connector Cable (TCC) while **LONGER lengths lower** the total wattage you can place on the TCC. See the chart below for maximum wattage for the specific length of the desired MAIN SUPPLY CABLE.
6. If you purchased any of the optional **CS938S Deck Lights**, the 10 watt lamps included will allow more fixtures to be added to a run as long as the total maximum wattage is not exceeded according to the chart below.

Length of Main Supply Cable to First Fixture or T-Connector Cable	Total Wattage Available on T-Connector Cable	Length of Main Supply Cable to First Fixture or T-Connector Cable	Total Wattage Available on T-Connector Cable
50 Feet	145 watts	110 Feet	65 watts
60 Feet	120 watts	120 Feet	60 watts
70 Feet	100 watts	130 Feet	55 watts
80 Feet	90 watts	140 Feet	50 watts
90 Feet	80 watts	150 Feet	45 watts
100 Feet	70 watts	175 Feet	35 watts

Save these instructions!

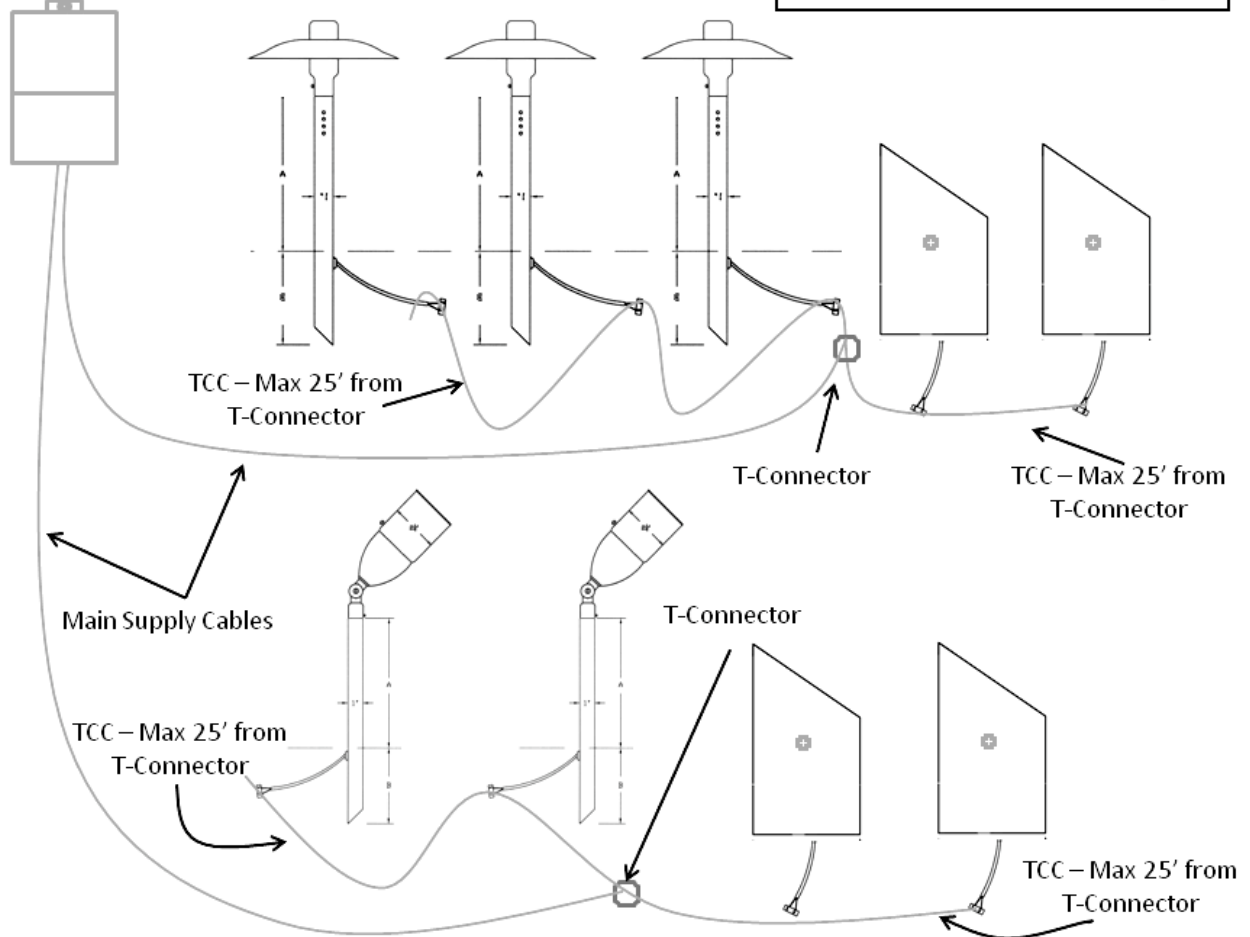


CS9300 Professional Series Landscape Lighting System – pg. 3

Example of Wiring Plan

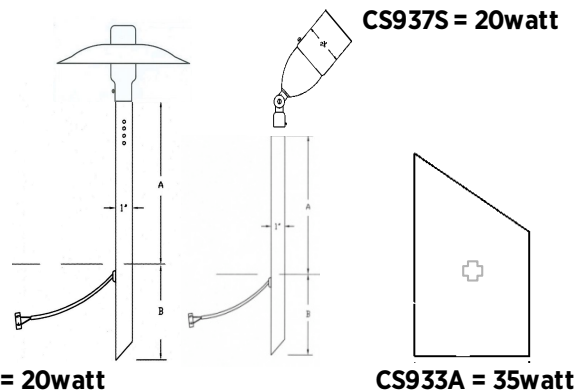
Power Transformer

NOTE: TCC = T-Connector Cable - Must not exceed a total of 50-Ft in length.



The example above demonstrates how to properly add various luminaires to the **T-Connector Cable (TCC)** to achieve a **balanced load** on each Main Supply Cable. The T-Connector is placed in the center of the TCC or center luminaire and each side of the TCC must be no greater than 25 feet in length (50 feet total for the T-Connector Cable). Connect a comparable number of luminaires and wattage load to each side of the T-Connector.

Save these instructions!





Professional Series CS933A Well Lights

INSTALLATION INSTRUCTIONS

pg. 4

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, OR INJURY
TO PERSONS IMPORTANT SAFETY INSTRUCTIONS

For use with Low Voltage Landscape Lighting Power Units. FOR OUTDOOR USE ONLY.

Amperage not to exceed 25 AMPS - Voltage not to exceed 15 VOLTS

Warning: Luminaire must be installed in accordance with the National Electric Code (NEC) and all Local Codes. Failure to comply with NEC and/or Local Codes may cause serious injury and could destroy the luminaire. Failure to comply with NEC and Local Codes will void all warranties.

- Low voltage cable shall be protected by routing in close proximity to the luminaire or fitting, or next to a building structure such as a house or deck and have the length cut off so that it is connected to a connector within 6 inches (15.2 cm) from a building structure, a luminaire, or fitting.
- When ordering additional wire or cable, please contact the manufacturer customer service or contact a qualified electrician.

Safety Warning: LAMP IS HOT WHEN LUMINAIRE IS ON! Hot lamp creates risk of fire and injury to persons. Keep away from combustibles. Lamp gets hot very quickly. Turn off or unplug luminaire and allow lamp to cool to change bulb. When using high wattage lamps, keep luminaire away from children, as luminaire may become VERY HOT. Do not install luminaire within 10 feet (3.05 meters) of a pool, spa, fountain, or pond. Do not bury luminaire below the recommended depth and keep luminaire clear of debris. Use only UL compliant components including low-voltage power units, cable, wire connectors, and any other component necessary. **CAUTION: Luminaire is NOT submersible!**

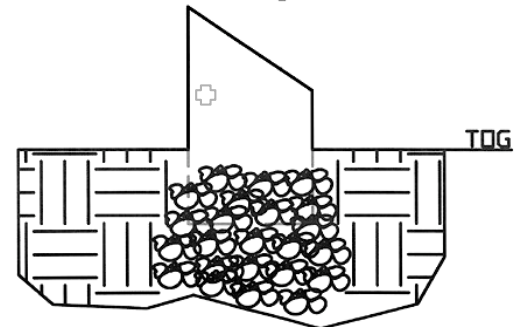
NOTE: Do not exceed the maximum wattage rating or maximum amperage rating of the power unit (transformer) used when installing multiple luminaires. NOT FOR USE WITH DIMMERS!

INSTALLATION GUIDELINES

1. Disconnect or unplug transformer from power source.
2. Dig a hole at the location desired 6" in diameter and approximately 12" deep.
3. Add 7" of gravel in the bottom of the hole for drainage.
4. Connect the wire terminals to the main lead to the transformer using included Quick Connect lead connectors.
5. Cable may be buried if desired to a maximum depth of 6 inches underground.
6. Adjust angle of bulb and tighten wing nuts on side of luminaire to secure position.
7. Do not exceed 12 Volts at the Luminaire.
8. Recommended Lamp: 35W Par36 (Maximum Wattage = 35 watts with lens cover)

CAUTION: POSITION LAMP TO ENSURE BULB DOES NOT TOUCH LENS COVER TO AVOID DAMAGE. KEEP LENS CLEAR OF MULCH AND DEBRIS AT ALL TIMES!

We Recommended 7" of
gravel to allow for
water drainage.



Save these instructions!





Professional Series CS936S Path Lights

INSTALLATION INSTRUCTIONS

pg. 5

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, OR INJURY
TO PERSONS IMPORTANT SAFETY INSTRUCTIONS

For use with Low Voltage Landscape Lighting Power Units. FOR OUTDOOR USE ONLY.

Amperage not to exceed 25 AMPS per circuit

Voltage not to exceed 15 VOLTS per circuit

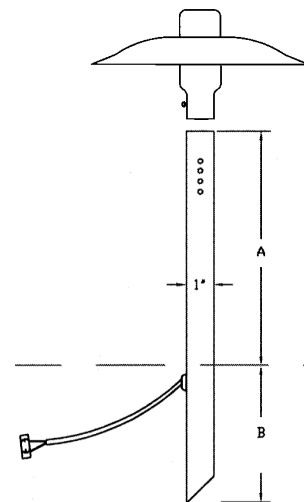
Warning: Luminaire must be installed in accordance with the National Electric Code (NEC) and all Local Codes. Failure to comply with NEC and/or Local Codes may cause serious injury and could destroy the luminaire. Failure to comply with NEC and Local Codes will void all warranties.

Safety Warning: LAMP IS HOT WHEN LUMINAIRE IS ON! Hot lamp creates risk of fire and injury to persons. Keep away from combustibles. Lamp gets hot very quickly. Turn off or unplug luminaire and allow lamp to cool to change bulb. Do not touch lamp with bare hands. Use a soft cloth to handle lamp as oil from skin may damage the lamp. When using high wattage lamps, keep luminaire away from children as luminaire may become VERY HOT. Do not install luminaire within 10 feet (3.05 meters) of a pool, spa, fountain, or pond. Do not cover or bury luminaire and keep luminaire clear of debris. Use only UL compliant components including low-voltage power units, cable, wire connectors, and any other component necessary. **CAUTION: Luminaire is NOT submersible!**

NOTE: Do not exceed the maximum wattage rating or maximum amperage rating of the power unit (transformer) used when installing multiple luminaires.

INSTALLATION GUIDELINES

1. Disconnect or unplug transformer from power source.
2. All Path Light tops are to be mounted to a power stake and are interchangeable.
3. Drive the power stake into the ground at the desired location and depth (see "B") with the included installation driver tool.
4. Install bulb, slide top over power stake, and set top at the desired height position using set screw or pushpin in holes.
5. Connect the wire terminals to the main lead to the transformer using included Quick Connect lead connectors.
6. Cable may be buried if desired to a maximum depth of 6 inches underground.
7. Do not exceed 12 Volts at the Luminaire.
8. Recommended Lamp: 20W G4 Halogen Bi-pin (Maximum Wattage = 35W)



Save these instructions!





Professional Series CS937S Directional Lights

INSTALLATION INSTRUCTIONS

pg. 6

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, OR INJURY
TO PERSONS IMPORTANT SAFETY INSTRUCTIONS

For use with Low Voltage Landscape Lighting Power Units. FOR OUTDOOR USE ONLY.

Amperage not to exceed 25 AMPS per circuit

Voltage not to exceed 15 VOLTS per circuit

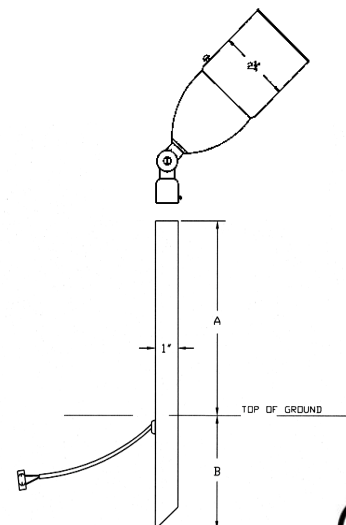
Warning: Luminaire must be installed in accordance with the National Electric Code (NEC) and all Local Codes. Failure to comply with NEC and/or Local Codes may cause serious injury and could destroy the luminaire. Failure to comply with NEC and Local Codes will void all warranties.

Safety Warning: LAMP IS HOT WHEN LUMINAIRE IS ON! Hot lamp creates risk of fire and injury to persons. Keep away from combustibles. Lamp gets hot very quickly. Turn off or unplug luminaire and allow lamp to cool to change bulb. Do not touch lamp with bare hands. Use a soft cloth to handle lamp as oil from skin may damage the lamp. When using high wattage lamps, keep luminaire away from children as luminaire may become VERY HOT. Do not install luminaire within 10 feet (3.05 meters) of a pool, spa, fountain, or pond. Do not cover or bury luminaire and keep luminaire clear of debris. Use only UL compliant components including low-voltage power units, cable, wire connectors, and any other component necessary. **CAUTION: Luminaire is NOT submersible!**

NOTE: Do not exceed the maximum wattage rating or maximum amperage rating of the power unit (transformer) used when installing multiple luminaires.

INSTALLATION GUIDELINES – STAKE MOUNTED MODEL

1. Disconnect or unplug transformer from power source.
2. This style of Directional Light is a complete luminaire and designed to be mounted on a ground stake.
3. Drive the ground stake into the ground at the desired location and depth (see “B”) with the included installation driver tool.
4. Connect the matching male and female terminals on the ground stake and luminaire, slide the socket onto the ground stake and secure the position desired using the brass screws on the adjustable knuckle.
5. Connect the wire terminals to the main lead to the transformer using included Quick Connect lead connectors.
6. Cable may be buried if desired to a maximum depth of 6 inches underground.
7. Do not exceed 12 Volts at the luminaire.
8. Recommended Lamp: 20W MR Halogen (Maximum Wattage = 35W)



Save these instructions!





Professional Series CS938S Deck Lights

INSTALLATION INSTRUCTIONS

pg. 7

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, OR INJURY
TO PERSONS IMPORTANT SAFETY INSTRUCTIONS

For use with Low Voltage Landscape Lighting Power Units. FOR OUTDOOR USE ONLY.

Amperage not to exceed 25 AMPS per circuit

Voltage not to exceed 15 VOLTS per circuit

Warning: Luminaire must be installed in accordance with the National Electric Code (NEC) and all Local Codes. Failure to comply with NEC and/or Local Codes may cause serious injury and could destroy the luminaire. Failure to comply with NEC and Local Codes will void all warranties.

Safety Warning: LAMP IS HOT WHEN LUMINAIRE IS ON! Hot lamp creates risk of fire and injury to persons. Keep away from combustibles. Lamp gets hot very quickly. Turn off or unplug luminaire and allow lamp to cool to change bulb. Do not touch lamp with bare hands. Use a soft cloth to handle lamp as oil from skin may damage the lamp. When using high wattage lamps, keep luminaire away from children, as luminaire may become VERY HOT. Do not install luminaire within 10 feet (3.05 meters) of a pool, spa, fountain, or pond. Do not cover or bury luminaire and keep luminaire clear of debris. Use only UL compliant components including low-voltage power units, cable, wire connectors, and any other component necessary. **CAUTION: Luminaire is NOT submersible!**

NOTE: Do not exceed the maximum wattage rating or maximum amperage rating of the power unit (transformer) used when installing multiple luminaires.

INSTALLATION GUIDELINES (Optional Deck Light Not Included With CS9300 System)

1. Disconnect or unplug transformer from power source.
2. Deck Lights are complete luminaires and are designed to be mounted directly to a vertical surface, deck post, or wall.
3. Position the luminaire at the desired location and drill a 3/8" hole if needed for the wire to feed through the deck post or other vertical surface.
4. Attach luminaire to surface using the stainless steel mounting screws provided according to the mounting hole locations on the luminaire.
5. Connect the wire terminals to the main lead to the transformer using included Quick Connect lead connectors.
6. Cable may be buried if desired to a maximum depth of 6 inches underground.
7. Do not exceed 12 Volts at the Luminaire.
8. Recommended Lamp: 10W G/4 Halogen Bi-pin (Maximum Wattage = 20W)



Save these instructions!





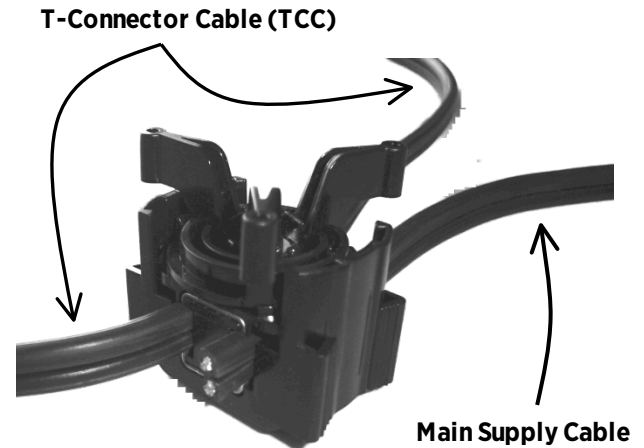
CS9300 Professional Series Landscape Lighting System – pg. 8

T-Cable Connectors – Additional Wiring Installation Instructions

T- Connectors are a fast and easy method for creating and connecting the **T-Connector Cable (TCC)** to the end of a **Main Supply Cable**. These connectors will work on both 12 gauge and 10 gauge cable for home runs.

To make the T-Connector Cable,

1. Unscrew the top of the T-Connector to expose the slots and wire conductors.
2. Position the **END** of the Main Supply Cable into one slot and push down over the bottom metal piercing conductors.
3. Position the **CENTER** of the T-Connector Cable (maximum of 50-Ft total) into the second slot and push down over the bottom metal piercing conductors.
4. Screw the top of the T-Connector back on and **tighten securely** to allow the top and bottom metal piercing conductors to make contact with the copper wire.



Quick Connectors & Installation



Quick Connects are a fast and easy method for connecting P. M. Lighting landscape lighting luminaires to the **T-Connector Cable** and **Main Supply Cable** to the power transformer. These connectors will work on both 12 gauge and 10 gauge cable for home runs. Simply position the cable between the 2 halves of the Quick Connects as shown and squeeze the parts together tightly to pierce both wires with the metal conductors. The teeth on the ratchet devices lock the pierced terminals into place to securely hold the connection over time.

To install or replace Quick Connects,

1. Cut the old Quick Connect parts from the wires (if replacing old ones) and strip the end of the wires to approximately ½” in length.
2. Use the wire nuts included in the replacement kit to connect each side of the Quick Connect to the 18 gauge wire on the luminaire.
3. Attach and secure the new Quick Connect as outlined above.

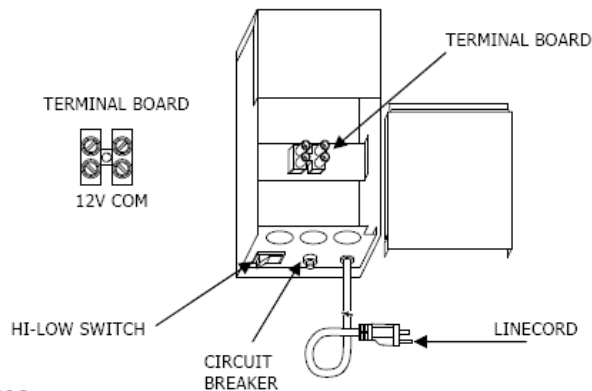
Save these instructions!





CS9300 Professional Series Landscape Lighting System – pg. 9

INSTALLATION INSTRUCTIONS – IMPORTANT – SAVE THESE INSTRUCTIONS



ELECTRICAL PROTECTION

This unit contains dual circuit protection. The primary or 120 volt side of the transformer is thermally protected and will automatically shut off when overheated. If the secondary of 12 volt side is overloaded the circuit breaker on the front of the transformer will trip. If the total lamp wattage on the circuit exceed the rated wattage of the transformer, reduce the wattage by lowering the lamp wattage or reduce the number of fixtures on the circuit. If the unit continues to cycle on and off, have the unit inspected by a qualified electrician. To reset the circuit breaker, just depress the circuit breaker reset button or reset switch to "on".

OPERATING INSTRUCTIONS

MANUAL CONTROL WITH THREE POSITION SWITCH (LOW / OFF / HIGH)

- "Low" position – less than 50% transformer capacity, for cable runs less than 50 feet or high starting voltage on the primary side of the house. NOTE: These applications can be set on "High" for more output.
- "Off" position – turns off transformer.
- "High" position – for fully loaded transformer (maximum wattage capacity), for long cable runs or low starting voltage on primary side from house.

SUITABLE FOR OUTDOOR USE ONLY

INSTALL AND MAINTAIN TO MEET APPLICABLE CODES

This power supply is for use with landscape lighting systems only. Do not connect two or more power supplies in parallel.

Transformer should be mounted close to power supply. Extension cords should not be used with this unit.

This outdoor power unit shall be connected to a grounded 115 / 120 volt covered GFCI receptacle marked "Wet Location" while in use. Mount the rain-tight transformer at least one foot above ground level with the wire terminals facing down (mounting hardware not included). NOTE: Do not energize transformer until installation of system is complete.

Landscape wiring is intended for shallow burial, less than 6 inches (152mm) below the surface. NOTE: If more wire is needed, contact your local landscape lighting distributor. Do not use within 5 feet of a pool.

Finding Transformer Load Low Voltage systems require the use of a transformer to reduce standard 120-VOLT power from your home to 12-VOLTS. To determine the transformer size you will need to add up the wattage of all the lamps you plan to use. Select a transformer that matches closely as possible to the total lamp wattage. For example, if you have 11 fixtures all rated at 24.4 watts, you will need a 300 watt (VA) transformer ($11 \times 24.4 = 268.4$ watts). Generally, the total lamp load should not be less than one-third the transformer's wattage rating, not exceed its maximum wattage capacity. If your total wattage is too high, either divide the load between two transformers, or use a more powerful transformer.

- Split cable approximately 3", and strip $\frac{1}{2}$ " insulation off of each wire. Cable is the heavy black wire to which all 12-volt low voltage lighting fixtures will be connected.
- Insert one of the stripped wire ends under the terminal marked 12V on the terminal block. Place the other stripped end under the terminal block marked COM. Tighten screws securely – NOTE: 600 watt transformers have 2-300 watt circuits. This means that there are 2-12V terminals and 2-COM terminals. Each circuit cannot exceed 300 watts.

FOR INSTALLATION IN CANADA

This device is accepted as a component of a landscape lighting system where the suitability of the combination shall be determined by CSA or local authorities having jurisdiction. To comply with CSA requirements, this fixture should be installed by a qualified electrician. Au Canada . Pour entre en accord avec IES, 1015 CSA. Ce luminaire doit être installé par un electricien qualifié.





CS9300 Professional Series Landscape Lighting System – pg. 10

Accessories & Replacement Bulbs



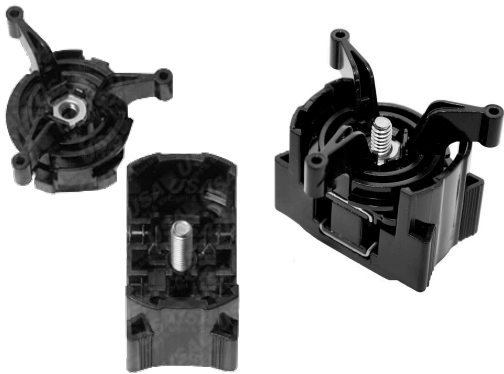
**Quick Connectors (on each luminaire)
Model #IT-06**



**Stake Installation Tool
Model #DC-01**



**Timer with Photocell
Model #IT-01**



**T-Connectors (2 included)
Model #IT-02**



**CS933A Replacement Lamps
Model #Par36/35 watt**



**CS937S Replacement Lamps
Model #MR16-20 watt**



**CS936S & CS938S Replacement Lamps
Models #G4/20 watt & G4/10 watt**



P. O. Box 98
Ashland City, TN 37015

Phone (615) 792-6884 Fax # (615) 792-6898

© 2009 P. M. Lighting, LLC
All Rights Reserved