



# UNIVERSAL LED LIGHT W/MULTIPLE PROGRAMS

## INSTALLATION AND USERS GUIDE

### IMPORTANT WARNING & SAFETY INSTRUCTIONS

---

**DANGER** - SERIOUS BODILY INJURY OR DEATH CAN RESULT IF THESE LIGHTS ARE NOT INSTALLED AND USED CORRECTLY

**DANGER** - INSTALLERS, POOL OPERATORS AND POOL OWNERS MUST READ THESE WARNINGS AND ALL INSTRUCTIONS BEFORE USING THESE LIGHTS

**WARNING** - Before installing this product, read and follow all warning notices and instructions in this Guide. Failure to follow warnings and instructions can result in severe injury, death or property damage. For more information contact company at numbers contained within Guide.

**WARNING** - These underwater swimming pool lights MUST BE installed by a licensed or certified electrician or a qualified pool professional in accordance with the National Electric Code (NEC) or the Canadian Electric Code (CEC), CSA C22.1. All applicable local installation codes and ordinances must also be adhered to. Improper installation will create an electrical hazard which could result in death or serious injury to pool users, installers or others due to electrical shock.

**ALWAYS DISCONNECT THE POWER TO THE POOL LIGHT(S) BEFORE SERVICING.**

---

**IMPORTANT NOTICE - ATTENTION INSTALLER:** This Installation and Users Guide contains important information about the installation, operation and safe use of this swimming pool/spa light. This Guide should be given to the owner and/or operator of this equipment.

**READ AND FOLLOW ALL INSTRUCTIONS**  
**SAVE THESE INSTRUCTIONS**

# INSTALLATION INSTRUCTIONS- SERVICABLE PRODUCT

## Universal LED Underwater Lighting

READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY

### ⚠ CAUTION! SAFETY PRECAUTIONS

⚠ Proagua Universal Lights are a low voltage light and should NEVER be electrically connected to a power source other than an approved pool "Safety Rated" UL Listed outdoor rated Class 2, 12VAC Transformer. Failure to comply will either damage or destroy Lights and VOID the Warranty.

### ⚠ TURN OFF MAIN POWER TO LIGHT BEFORE INSTALLATION /SERVICE

**NOTE:** No separate ground or bonding wire is required for the Universal LED low voltage lights. **If local ordinance requires bonding - procure our PA-SS-BF bonding niche.**

#### STEP 1

The light fixture must be installed in or on a wall of the pool (or water feature) with the top of the lens opening not less than 4 inches (10.16cm) below the normal water level of the pool.

**NOTE:** Requires the use of a 1-1/2" threaded wall fitting.

1.5" Pipe through bond beam for a minimum of 14" then 1" conduit min. with sweeps / no 90 degree bends. We highly recommend the use of 1.5" pipe throughout the entire width of the bond beam.

**NOTE:** Use of 1.5" pipe with 14" min. length will accommodate all SAVI Lighting nicheless products. **See Minimum Conduit Lengths listed above.**

#### STEP 2

Snake the 2-conductor electric cord through the conduit outlet of the wall fitting, into the conduit and up to the location of the 12VAC pool transformer. Cut off excess cord after allowing for service and length of run to the transformer. Pull the fixture snug to the wall fitting. 18"-24" of excess cord recommended as service loop.

#### STEP 3

Using enclosed Lens Key, thread the light into the wall fitting until it is snug. Please provide Pool Owner with minimum of 1 key upon job completion (see winterization clause above)

An example of an approved pool transformer is the Intermatic model PX-100 or PX-300. Refer to WIRE GAUGE AND WIRE LENGTH guide for proper wire gauge size in reference to the use of Junction Boxes installations. **NOTE:** Proagua Lights can be used with any UL Listed outdoor rated Class 2, 12VAC transformer provided the wattage & amperage is not exceeded by the total wattage and amperage in use.

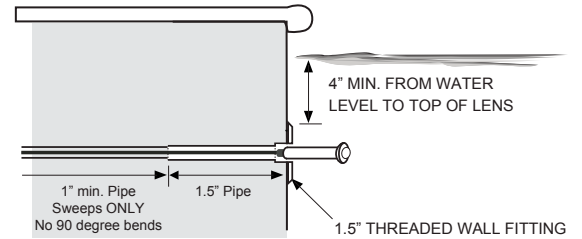
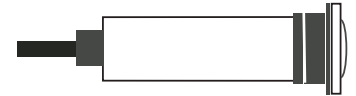
**WATTS    AMPS    MINIMUM CONDUIT REQUIREMENTS**

Product Names

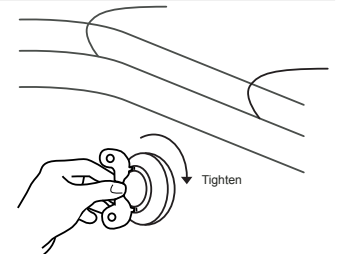
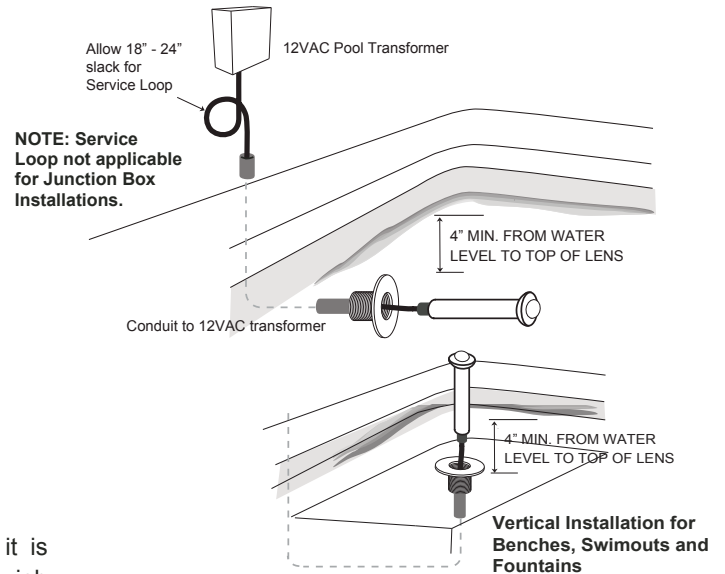
Universal Light      12      1.0      9"

All products listed above come in a variety of cord length  
Typical Lengths are: 30-50-100 & 150FT

**LIGHTS ARE SERVICABLE - DO NOT REMOVE CORD FROM CONDUIT**



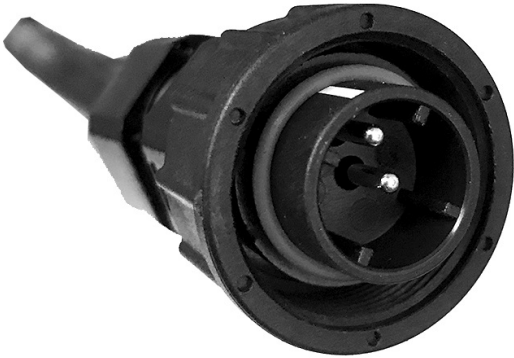
**NOTE:** Check with Local Building officials as to what conduit/pipe is acceptable



# UNIVERSAL LIGHT VISUAL OVERVIEW



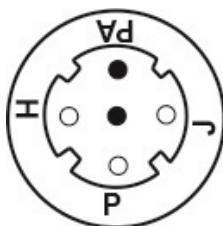
Showing the Cord Disconnect Feature of the Universal Light



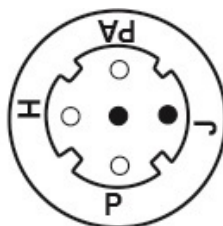
Cord Side of the Disconnect Fitting



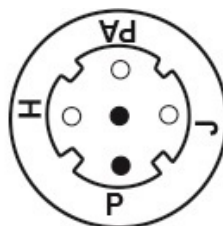
Shows the 4 Different Lighting Programs for Selection - Program is selected by the installation position of the cord connector 2 pins



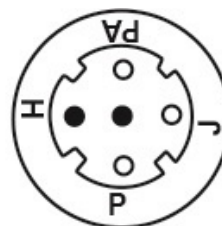
PROAGUA  
Program  
Select



JANDY  
Program  
Select



PENTAIR  
Program  
Select



HAYWARD  
Program  
Select

# OPERATION INSTRUCTIONS

## Synchronization Process for Universal LED Color Pool & Spa Lights

### PA PROGRAM SELECTION MODE

**Important Note:** All fixtures must be tied into the same transformer, circuit or switch for synchronization to occur.

#### LIGHT SYNCHRONIZATION

1. Turn the lights on and wait for 20 seconds. The lights will first come on white for 10-15 seconds and then return to the color mode it was on prior to being turned off. (If this is the initial installation, the lights will return to whatever mode they were in when last receiving power).
2. Do not move to the next step until step one is complete.
3. To synchronize lights, turn the lights off, wait 6-9 seconds and then turn them back on. You should see three quick flashes (red, green & blue), and then all the lights will reset to the first color mode (Treasure Island).
4. (A) If you do not see three quick flashes then the lights did not reset.  
(B) If you did not wait long enough (shorter than 6 seconds) the lights will advance to their next color mode. They are not synched as each light could be in different color modes.  
(C) If you wait too long (longer than the 9 seconds) they all will go to white for 10-15 seconds, looking like they're synched BUT AFTER 15 seconds they will return to their previous color mode (which at this point the lights are still unsynchronized).
5. Repeat step 1 - 3 until synchronization is accomplished.
6. To confirm the lights have been synchronized (Treasure Island Mode) - the best way is to: turn the lights off for 1-2 seconds and turn back on – DO THIS TWICE. All the lights should be in the SAVI BLUE color mode. If they are all fixed on BLUE – you have now synchronized your lights. If not – turn the lights off for more than 20 seconds – Turn back on and proceed to Step 1.

#### OPERATING THE LIGHT

7. To move to the next color mode, Turn the lights off for 1-2 seconds and turn back on. Repeat until desired color mode is found.

Example: If you followed step six and are now on Blue and want the lights to be White, then the lights must be turned off and on (7) seven times to bring you to Moonlight White.

1. Treasure Island / Slow color change
  2. Moonlight White / Fixed White
  3. Blue / Fixed Blue
  4. Sargasso Sea / Fixed Green
  5. Blue Lagoon / Fixed Light Blue
  6. Passion Pink / Fixed Magenta
  7. Caribbean Hues / Blue and Green Slow Color Change
  8. Copacabana / Magenta, Yellow and Orange Slow Color Change
  9. Dance party / Multi Color Strobe Effect
8. The lights have memory. If the lights are off for 10 seconds or more, the next time the lights are turned on, they will go to white for approximately 10-15 seconds and then return to the last color mode they were on prior to being turned off (Step 1 listed above). This function allows you to keep your lights returning to your favorite color mode every time the lights are turned back on.
-

# **"P" SERIES LIGHTS HOMEOWNER OPERATING INSTRUCTIONS**

FOR COLOR & COLOR SHOW SELECTION

## **DO NOT LOOSE THIS AS YOU WILL NEED IT TO REMEMBER THE POSITIONS FOR COLORS & COLOR SHOW SELECTION**

We recommend that you place this next to Manual Switch used for light(s) operation.

This is primarily important for use with Manual Switches. When P Series are installed into Pentair or Zodiac R Series Controllers -color and colors shows are directly indicated by those controls

### **POWERING ON THE P SERIES LED LIGHTS**

1. Turn the lights on and wait for 20 seconds. The lights will first come on white for a few seconds and then return to the color mode it was on prior to being turned off. (If this is the initial installation, the lights will return to whatever mode they were in when last receiving power).

### **WHEN OPERATED FROM WALL SWITCH OR OTHER MANUAL OFF/ON METHOD**

2. To move to another color mode, Cycle the lights OFF/ON the selected number of times listed below.

Example: If you are now on BLUE (8) and want the lights to be Magenta (12), then the lights must be turned off and on (12) twelve times to bring you to Magenta.

To move to from Blue (#8) to Old School (#1) - turn OFF/ON 1 Time.

1. Old School - cycles through white,magenta,blue & green colors
2. Dance Mode: Rapid color changes
3. Smooth Mode: slow color transitions
4. Island Mode: Transitions beteen variety of blue and greens
5. USA Mode: Red,white and blue
6. Desert Mode:oranges, reds and magenta
7. Rich Mode: darker color shades
8. Blue
9. Green
10. Red
11. White
12. Magenta

Toggle Switch must be cycled each number of times to get to your color or color show selection.

13. Save: Saves the current color choice during a color show - see special section on SAVE usage

14. Bring Back: Turns on last saved color selection selected in Postion #13

These 2 Modes are specifically used with advanced control systems and not Manual Operations

**WARNING!! During the ON/OFF cycle, before the selected mode is displayed, no illumination will occur. During this period of time the pool/spa will be dark and precautions should be taken to avoid unforeseen accidents. Failure to observe this warning may result in serious injury for death to pool/spa users.**

3. The lights have memory. If the lights are off for 5-10 seconds, the next time the lights are turned on, they will go to white for approximately a few seconds and then return to the last color mode they were on prior to being turned off (Step 1 listed above). This function allows you to keep your lights returning to your favorite color mode every time the lights are turned back on.

# OPERATION INSTRUCTIONS -INDEPENDENT USAGE

## Operational Process for H SERIES LED Color Pool and Spa Lights

**Important Note: All fixtures must be tied into the same transformer, circuit or switch for synchronization**

### POWERING ON THE H SERIES LED LIGHTS

1. Turn lights on. The lights will first come on white for 15 seconds and then return to the last color mode they were on prior to being turned off. (If this is the initial installation, the lights will return to whatever mode they were in when last receiving power).

### OPERATING/ADVANCING THROUGH 10 FIXED COLORS & 7 COLOR SHOWS

2. To move to another color mode, Cycle the lights OFF/ON within 5 seconds. Each off/on cycle advances the program 1 step.

1. Color Show - Jamaican - Fast Color Sweeps
2. Deep Blue
3. Royal Blue
4. Light Blue
5. Aqua
6. Emerald
7. White
8. Red
9. Pink
10. Violet
11. Dark Purple/Red
12. Color Show - Evening Skies - Slow Color Sweeps
13. Color Show - Ocean View - Blue/Aqua/White Color Fades
14. Color Show - Blue/Green/ Magenta Color Swaps
15. Color Show - America - Red/White/Blue Color Swaps
16. Color Show - Fast Random Color Sweeps
17. Color Show - Slow Random Color Sweeps

3. The lights have memory. If the lights are off over 60 seconds, the next time the lights are turned on, they will go to white for approximately 15 seconds and then return to the last color mode they were on prior to being turned off (Step 1 listed above). This function allows you to keep your lights returning to your favorite color mode every time the lights are turned back on.

### 4. LIGHT SYNCHRONIZATION

H Series Lights may be operated independently or together depending upon the initial installation of your lights. All H Series lights that are wired to the same 12V Transformer/Switch will synchronize their operation of the above 17 Color & Shows. If they do get out of synch, turn the switch on then back off - wait between 6 and 9 seconds and turn the switch back on. They should now all be in position #1.

**NOTE: At NO TIME shall the H Series lights be used in conjunction with any other lights - including standard LED nicheless lights. The color choices, shows and operations are entirely different**

---

# OPERATION INSTRUCTIONS -INDEPENDENT USAGE

## Operational Process for > SERIES LED Color Pool and Spa Lights

**Important Note: All fixtures must be tied into the same transformer, circuit or switch for synchronization**

1. Turn the light **ON**. If the light has been off for 7 seconds or longer, the light will turn on to the last color selected.
2. To synchronize multiple lights to the same color mode you will need to reset to the beginning of the color mode sequence. With the lights **ON**, turn them **OFF** for five (5) seconds, then turn **ON** again. All of the lights will reset to the Alpine White color mode. If all of the lights are not in the Alpine White color mode, they have not been synchronized, repeat step 2.

### Operating or Changing from 1 light program to another

**Table 1. Color Mode Sequence**

Sequence Order	Color Modes
1	Alpine White
2	Sky Blue
3	Cobalt Blue
4	Caribbean Blue
5	Spring Green
6	Emerald Green
7	Emerald Rose
8	Magenta
9	Violet
10	Slow Color Splash
11	Fast Color Splash
12	America the Beautiful
13	Fat Tuesday
14	Disco Tech

The lights have memory. If the lights are off for 7 seconds or more, the next time the lights are turned on, they will return to the last color mode they were on prior to being turned off (Step 1 listed above). This function allows you to keep your lights returning to your favorite color mode every time the lights are turned back on.

**NOTE:** To synchronize the Universal Light set on J program wired to separate switches, perform the above actions on all of their switches simultaneously. All Universal Lights will synchronize automatically if activated by the same switch. No other accessories are required.



# IMPORTANT: READ FIRST

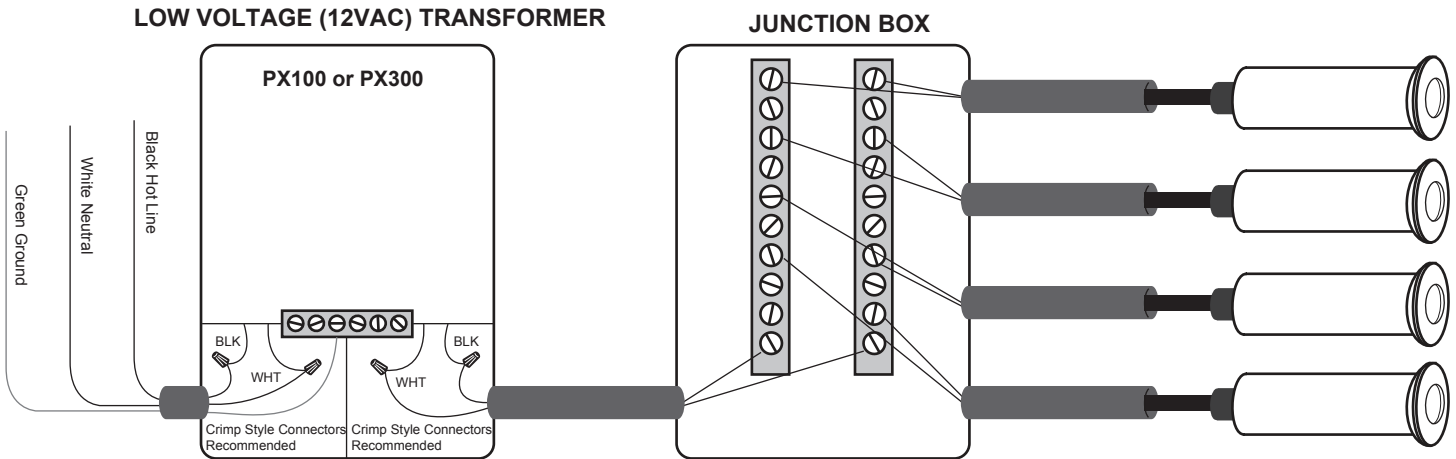


**LED UNDERWATER LIGHTS ARE LOW VOLTAGE FIXTURES. IMPROPER WIRE GAUGE AND WIRE LENGTH CAN AFFECT THE PERFORMANCE OF THESE PRODUCTS. FOLLOW THE GUIDES BELOW TO DETERMINE THE PROPER OPERATION AND OPTIMUM PERFORMANCE OF SAVI LIGHTS.**

## WIRE GAUGE & WIRE LENGTH GUIDE

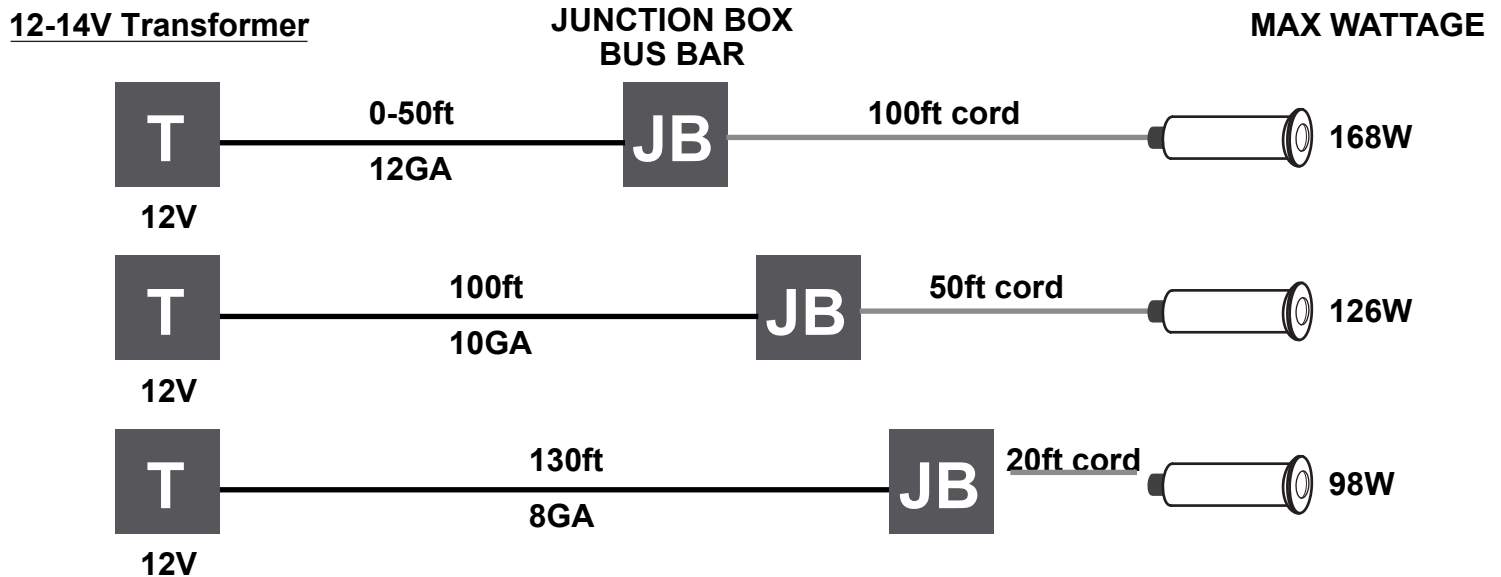
**NOTE:** Min. 12VAC: / Max 13VAC. The maximum run of service between transformer and lights should not exceed 150ft in total length, inclusive of the use of J Box or not.

**When J-Box used all voltage readings are to be taken at J-Box when all Lights are set on WHITE. When Lights are connected directly to transformer, voltage readings are taken at transformer with Lights on WHITE.**



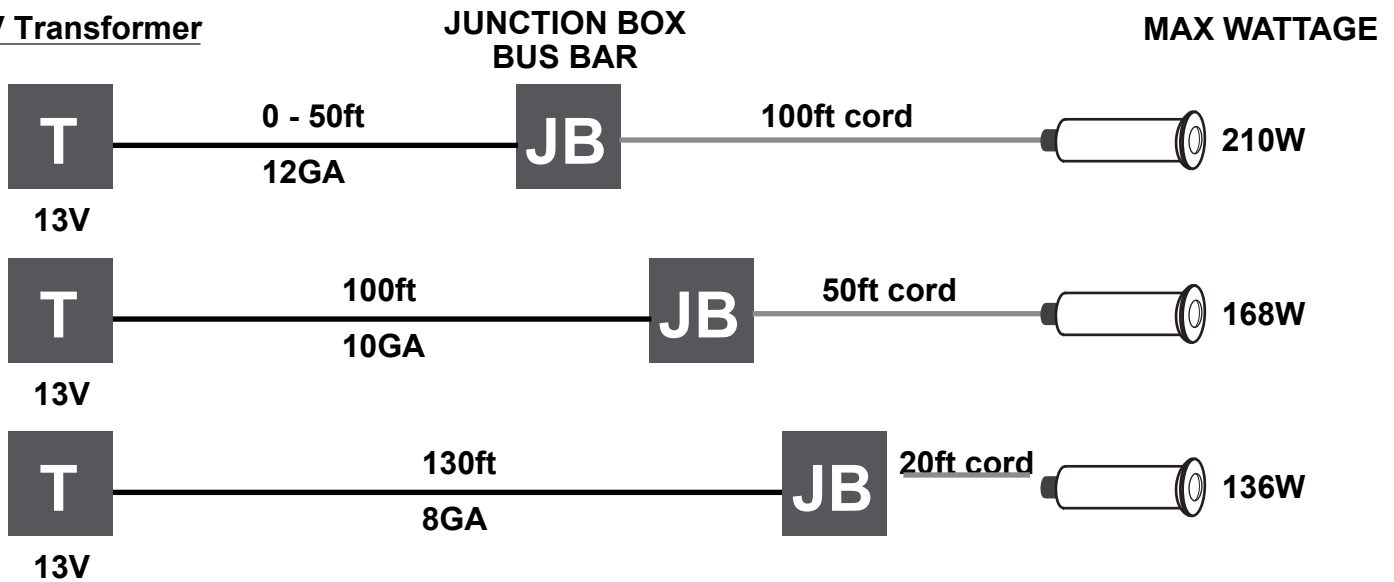
**NOTE:** This Diagram is to be used as a guide line only for a typical System Installation and should only be used as such. It is the Installers sole responsibility to verify and assure that proper gauging of secondary wiring from the Transformer to the J-Box are in compliance with your local, State and National Electrical Codes.

**NOTE:** The use of Solid Core over Stranded wire and terminating at Bus Bars is strongly recommended.

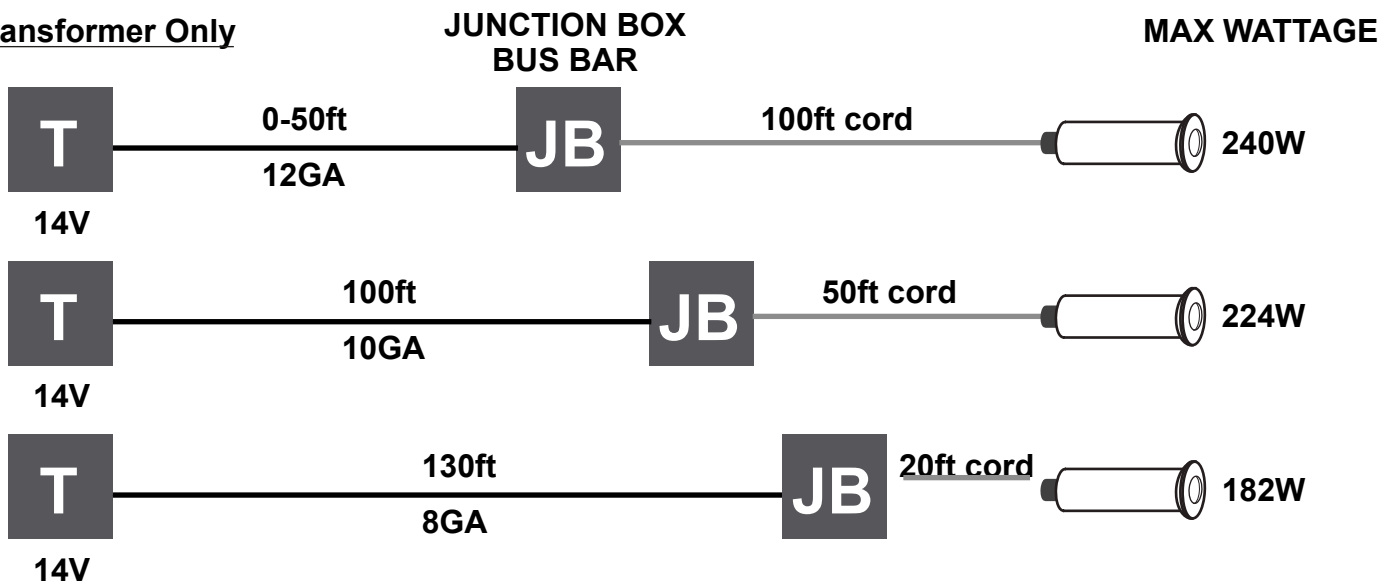




**12-14V Transformer**



**14V Transformer Only**



**NOTE:** Please use appropriate low voltage supply to pool lights, ie. if 12V is appropriate voltage DO NOT use 13V or 14V tap on transformer output (if so equipped),

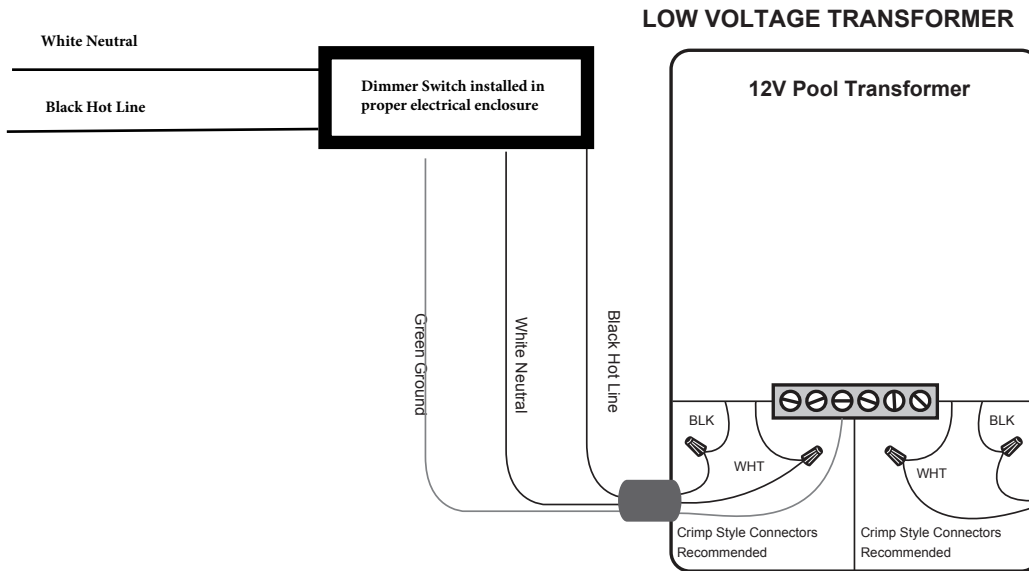
**WARNING** - DO NOT run 120V and Low Voltage wires in the same conduit or enclosures.

ALL Proagua Universal Color Lights are designed to work or synchronize with each other. Please follow all installations for proper installation and follow Synchronization Instructions for proper operation.

All Proagua Universal White Lights are designed to allow for the option of dimming or light output reduction. See enclosed information regarding general guidelines for dimming.

**THE FOLLOWING INFORMATION IS FOR GENERAL INSTALLATION OF DIMMING SWITCHES OR CONTROLS FOR USE WITH UNIVERSAL PROAGUA WHITE LED LIGHTS.**

All WHITE LED Proagua Lights can be dimmed by the use of simplistic dimming switches. These directions specify those switches that are for independent or stand a lone use. For achieving dimming by the use of automatic or home based energy control systems please consult those controls systems instructions. AT NO TIME SHALL ANY SWITCH OR CONTROL BE INSTALLED ON THE 12V SIDE OF THE TRANSFORMER IN AN ATTEMPT TO DIM LIGHTS. DOING SO MAY DAMAGE THE LED LIGHT CARTRIDGE AND VOID WARRANTY.



## Minimum and Maximum Cord Lengths Per Voltage Input

**Voltages** are determined by the measured Voltage level @ the Bus Bar where the Transformer and Cords are connected while on White

### UNIVERSAL LIGHT MIN/MAX VOLTAGE PER CORD LENGTH

CORD LENGTH	Min. Voltage	Max. Voltage
15 Feet	7.8Vac	12.0Vac
30 Feet	8.6Vac	12.2Vac
50 Feet	9.4Vac	12.4Vac
100 Feet	10.7Vac	13.2Vac
150 Feet	11.82V	13.8Vac

Proagua provides these guidelines as a reference for proper operation. Failure to adhere specifications could result in improper operation or synchronization of lights.

**ALL VOLTAGE READINGS ARE TAKEN WHILE LIGHTS ARE ALL SET TO WHITE**

As these Charts address the Minimum - please remember that at no time should the MAXIMUM distance with or without J Box extend past 150 ft.

# UNIVERSAL LED LIGHTING PRODUCTS

## BASIC TROUBLESHOOTING GUIDE - FOR ADDITIONAL INFORMATION CONTACT TECHNICAL SERVICES AT TELEPHONE NUMBERS LISTED BELOW

**ALL LIGHTS FAIL TO ILLUMINATE** - Check 120V power supply into transformer - Check for 12V output at transformer - check or reset GFCI. Make sure 120 volts has not been used in the installation of these lights - damage is assured and is NON WARRANTY.

**ONE OR MORE LIGHTS DIM** - This is generally caused by a poor connection or improper wire gauge. To determine if light or lights has fault - separate each light from all other lights and independently wire 12V to this light only. Repeat process on each light. If junction box is used - recheck for proper connection of light cord. **AGAIN IF A JUNCTION BOX IS BEING USED - VERIFY THAT THE CORRECT WIRE GAUGE IS BEING USED BETWEEN TRANSFORMER AND JUNCTION BOX. EVEN THOUGH OTHER LIGHTS MIGHT WORK CORRECTLY - IMPROPER WIRE GAUGE SIZE COULD ALLOW 1 OR MORE LIGHTS TO WORK IMPROPERLY.** Measure and verify that proper low voltage is being supplied to lights - see **WIRE GAUGE & WIRE LENGTH GUIDE CHART**.

**BLINKING, FLASHING, NON WORKING LIGHTS** - This is generally caused by a poor connection or improper wire gauge. To determine if light or lights has fault - separate light from all other lights and independently wire 12V to this light only. Repeat process on each light. If junction box is used - recheck for proper connection of light cord. **AGAIN IF A JUNCTION BOX IS BEING USED - VERIFY THAT THE CORRECT WIRE GAUGE IS BEING USED BETWEEN TRANSFORMER AND JUNCTION BOX. EVEN THOUGH OTHER LIGHTS MIGHT WORK CORRECTLY - IMPROPER WIRE GAUGE SIZE COULD ALLOW 1 OR MORE LIGHTS TO WORK IMPROPERLY.** Measure and verify that proper low voltage is being supplied to lights - see **WIRE GAUGE & WIRE LENGTH GUIDE CHART. MOST IMPORTANTLY SEE CHART FOR MIN/MAX VOLTAGE & CORD LENGTH CHART.**

**COLORED LIGHTS OUT OF SYNCH** - Follow Synchronization Instructions in this Guide. Be very patient and read instruction carefully. If lights fail to synchronize - verify that proper wire connections are being achieved for those lights that are out of step with others. Generally a lights failure to sync with the rest is: improper voltage supply or poor connection to light.

**NOTE:** In most situations problems come down to 4 main faults: improper voltage supply, improper wiring gauge, improper/poor wiring connections or the light itself.

**DO NOT PULL LIGHT AND CORD ENTIRELY FROM CONDUIT UNLESS INSTRUCTED BY COMPANY.**

For additional troubleshooting assistance or installation advice please contact Technical Services at telephone number below.

## LIMITED PRORATED WARRANTY

Proagua Products (herein referred to as “the Company”), warrants its products, excluding lamps, to be free from defects in material and/or workmanship, under normal condition, use and service, for a period of Five (5) years from the date of manufacture. During the first two (2) years 100% coverage on all parts, 3rd (3) year all warranty parts will be replaced at 35% of the then current List Price of such part and in years Four & Five (4&5) all warranty parts will be replaced at 50% of the then current List price of such part. This specific warranty is for parts only and specifically excludes all labor charges associated with warranty items.

### TERMS AND CONDITIONS:

This warranty only applies when the Company’s products are properly wired and installed together as a system; and operated within the electrical values shown on the Company’s specification sheets; used in lighting equipment designed and approved for the application and environmental conditions (temperature, humidity) within the normal specified operating range of the system. This warranty does not apply to any abnormal use in violation of any applicable standard, code or instructions for use in installations including those contained in the latest National Electrical Code (NEC), the Standards for Safety of Underwriters Laboratory, Inc. (UL), Standards for the American National Standards Institute (ANSI), in Canada, the Canadian Standards Association (CSA), Europe (CE), Australia (C-Tick). This warranty will not apply in the event of conditions demonstrating abnormal use or stress, including under/over voltage conditions, excessive switching cycles, excessive operating hours, alterations, accident, theft, misuse, abuse and damaged caused by negligent installation, improper maintenance or where adequate care has not been taken to prevent damage to the lighting system. Replacement of the Company’s product components with any other manufacturer will void the entire warranty.

### WARRANTY SERVICE CLAIMS:

The Company must issue a Return Material Authorization (RMA) number for all requests for warranty review. To expedite service, please contact the Company’s Customer Representative where you purchased the product. If you are unsure whether a situation exists that is covered by this warranty, please contact the Company’s customer service department from the company or division where you purchased the product for assistance. In the event of a defect in material or workmanship during the warranty period, the Company will repair or replace (at its own discretion) its products under the conditions of the warranty.

### RETURN OF DEFECTIVE PRODUCT:

After contacting the proper company or division and receiving the RMA#, the purchaser / user shall promptly return the product after receiving instructions regarding if, when and where to ship product. Product must be returned within 30 days of receiving RMA#. Shipping box must be clearly marked with RMA#. Failure to follow this procedure shall void this warranty. The company will cover expenses for material but will not cover shipping costs. Products returned without an RMA# will be refused and returned to sender at the senders expense.

### REPLACEMENT OF PRODUCT, LIMITS OF LIABILITY:

The foregoing shall constitute the exclusive remedy of the purchaser and the sole liability of Proagua Products regarding its products and component warranty. NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS MADE OR IS TO BE IMPLIED. In no event shall Proagua Products be liable for any other costs or damages including labor charges, lost profits or revenues, incidental, special or consequential damages. The Company reserves the right to examine all failed products and components to determine the cause of failure and patterns of usage and reserves the right to be the sole judge as to whether any product or component is defective and covered under this warranty. THIS WARRANTY IS ONLY TO THE ORIGINAL PURCHASER OF PRODUCT AND DOES NOT TRANSFER.

---