



# 160 & 320 ColorLogic® and CrystaLogic™ 1.5” LED Lights

LED Light Fixtures

## Owner's Manual



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LACUS11xxx, LYCUS11xxx  
LACUN11xxx, LYCUN11xxx  
LAWUS11xxx, LYWUS11xxx

Pour obtenir le manuel de l'utilisateur  
en Français consultez [www.hayward-pool.ca](http://www.hayward-pool.ca).

Hayward Pool Products  
620 Division Street, Elizabeth NJ 07207  
[www.hayward.com](http://www.hayward.com)



# HAYWARD®

## IMPORTANT SAFETY INSTRUCTIONS

**SAFETY WARNING:** Do not open. Light has no user serviceable parts inside. Improper installation may result in death or serious injury to bathers or service personnel or others by way of electric shock. Disconnect electrical power before installing or servicing this equipment. Read and follow all instructions. This product to be installed by qualified personnel only.

**INSTALLATION DEPTH REQUIREMENT:** Except when the fixture is installed in an area of the swimming pool that is not used for swimming and the lens is adequately guarded to keep any person from contacting it, the fixture must be installed in a wall or on a floor of a pool, spa, or water feature with the top of the lens opening not less than 4 in. and no more than 72 in. below the normal water level of the pool.

Model	Input (Volts, Amps, Watts)
LAC, LAW	14 VAC 60 Hz, 23 W
LYC, LYW	14 VAC 60 Hz, 13 W

## IMPORTANT WIRING CHECKLIST

Do not skip any steps in this or any section of the manual.

- The above safety warnings and the complete installation instructions in this manual have been read and followed.
- A SAFETY LISTED **POOL/SPA ISOLATION TRANSFORMER** HAS BEEN USED TO SUPPLY 14 VOLTS TO THE FIXTURE.
- The transformer output wiring HAS NOT been tied or shorted to ground.
- The cord length has not been extended beyond the guidelines in this manual.
- The cord jacket is not damaged, cut or spliced except as noted below.
- Extensions or splices to the cord are only made in a safety listed Pool / Spa junction box or junction box transformer system.
- The luminaire is firmly secured to the pool wall and cannot be removed without the use of a tool.
- The luminaire has been installed by qualified personnel in compliance with the National Electrical Code (NEC) or Canadian Electric Code (CE Code) and any applicable local codes and/or regulations.

Installed by: \_\_\_\_\_ of company \_\_\_\_\_ Date: \_\_\_\_\_

**LEAVE THESE INSTRUCTIONS WITH PROPERTY OWNER**



## Introduction

Congratulations on your purchase of a Hayward® ColorLogic® or CrystaLogic™ 1.5" LED Light.

Your Hayward ColorLogic and CrystaLogic 1.5" LED underwater light has these special features:

1. Long-lasting LED's (light-emitting diodes) which can last up to 10 times longer than current incandescent or halogen pool and spa lights.
2. ColorLogic models have multi color capability without any color wheels or moving parts to wear out.
3. ColorLogic models have multi color program capability which allows you to select any one of 17 different programs, 10 fixed colors, and 7 color shows in stand-alone mode.
4. When networked with specific Hayward automation controls, LACUN11xxx and LYCUN11xxx ColorLogic 1.5" LED light models are capable of 4 additional shows, 101 fixed light colors and offer custom speed, brightness and motion control.
5. Offers spectacular brilliant light with low power consumption. Uses up to 86% less energy than a typical incandescent pool light.

The 12 volt Hayward ColorLogic and CrystaLogic 1.5" LED (light-emitting diode) lighting fixtures you have purchased are UL Listed and intended for use both in and out of water. Because of the all plastic design with an impact resistant lens, these lights can be installed as little as 4 inches (10cm) from below the normal water level of the pool or spa to the top of the lens. It can also be installed upward facing on a floor without a rock guard for pools, spas, lighting ponds, fountains, or water falls.

Refer below for specific information about your 1.5" LED light model.

### 160 Models

LYWUS11xxx - white only, 100% brightness only

LYCUS11xxx - 100% brightness only

LYCUN11xxx - 100% brightness only, network support

### 320 Models

LAWUS11xxx - white only, selectable 50% or 100% brightness

LACUS11xxx - selectable 50% or 100% brightness

LACUN11xxx - selectable 50% or 100% brightness, network support

xxx - length of power cord

**GIVE THESE INSTRUCTIONS TO POOL/SPA OWNER AFTER INSTALLATION**



## Installation

If replacing an existing light, remove power to the light at the panel before starting this installation. Installation must be performed in accordance with Local and NEC codes.

### Cord Length and Minimum Required Voltage

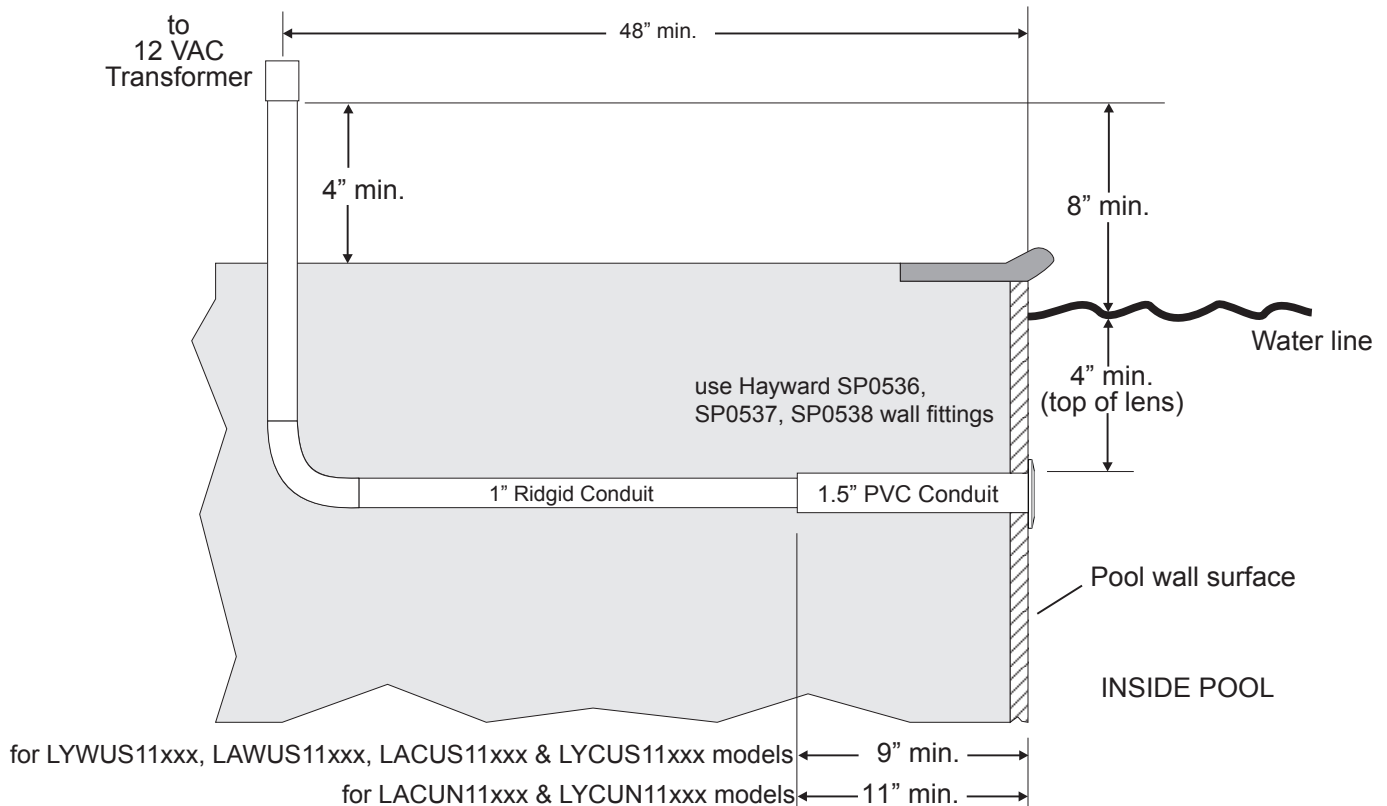
When installing ColorLogic/CrystaLogic 1.5" LED low voltage lights, the length of the cord has an effect on performance. To prevent performance problems, verify the transformer is providing the minimum required voltage according to the table below. To check this voltage, measure the voltage at the transformer while the light is "on" and operating in "white" mode. In some cases, a voltage greater than 12 volts is required due to a long cord run. Some transformers provide higher voltage taps for this purpose; check your transformer manufacturer's installation instructions for details. When using Hayward or other transformers that offer a 14v option, we suggest that you always use the 14 volt tap.

NOTE: Environmental conditions and long cord lengths (over 100') could cause a voltage drop that may result in decreased brightness.

Product	Total Cord Length from Transformer to Light	Minimum Required Voltage at Transformer
12v Accent Light	30 ft	12 - 14 volts
	50 ft	13 - 14 volts
	100 ft	14 volts

### Installation Overview

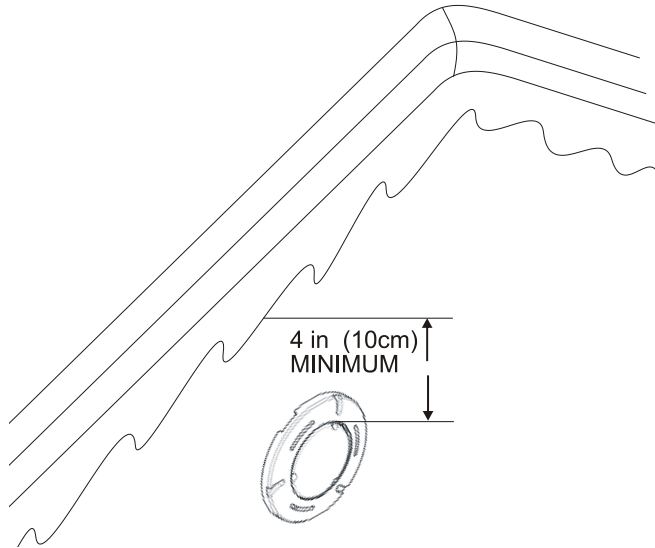
Refer to the diagram below of an overview of the ColorLogic/CrystaLogic 1.5" LED light installation. Be sure to read all of the following sections before installation.





## Installation Location

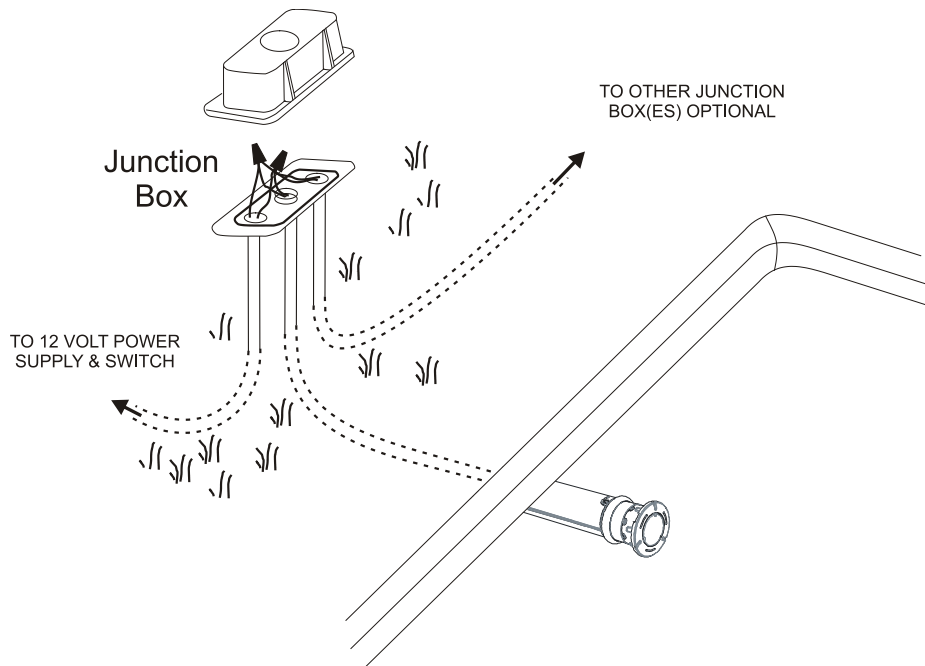
When installed in water, the ColorLogic or CrystaLogic 1.5" LED light must be installed in a wall or on a floor of the pool or spa with the top of the lens not less than 4 inches (10 cm) below the normal water level of the pool except when the fixture is installed in an area of the swimming pool that is not used for swimming. Select a location for the light fixture(s) that will give optimum light dispersion for the pool or spa design. Be sure to consider the direction of emitted light and take care not to point lights directly at the house or outdoor living spaces.



## Install Junction Box or Junction Box Transformer

When using a wallmount low voltage transformer, a junction box should be installed to make the connection to the pool/spa light. If using more than one light, an adequate amount of single or double outlet junction boxes will be required. Alternatively, Hayward low voltage junction box transformer kits (LT-BUY11H65) can be used when in-line transformers are desired. Refer to page 8 for more information.

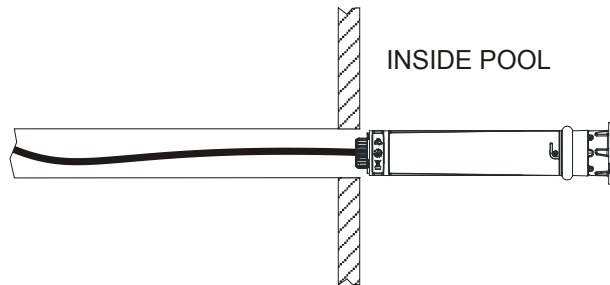
Junction boxes must be installed not less than 48 inches (1.22 m) from the edge of the pool or spa. Run conduit from the mounting location up to the junction box such that the junction box is not less than 8 inches (20 cm) above the maximum pool or spa water level, or not less than 4 inches (10 cm) above the ground, whichever is greater. Additional conduit should be run from the junction box to the power supply, switch panel, pool/spa controller, etc.



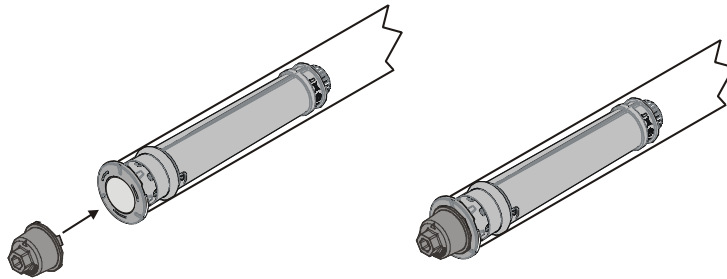


Install the Hayward ColorLogic and CrystaLogic 1.5" LED Light into PVC conduit  
With the PVC conduit secure in the pool wall, follow these steps to secure the light:

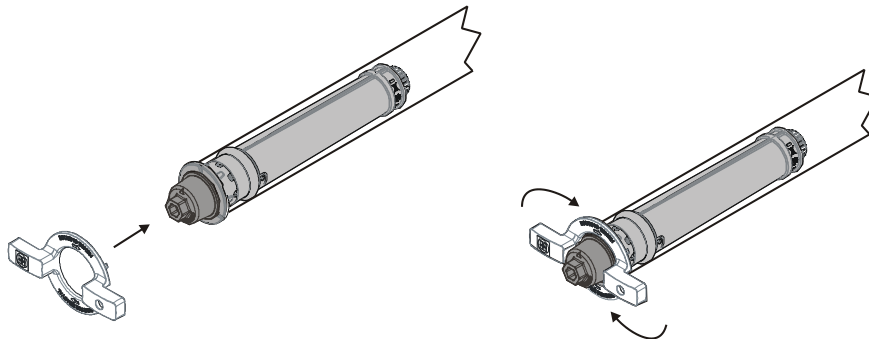
- 1) Run the ColorLogic/CrystaLogic 1.5" LED light cord through the conduit to the transformer or junction box.

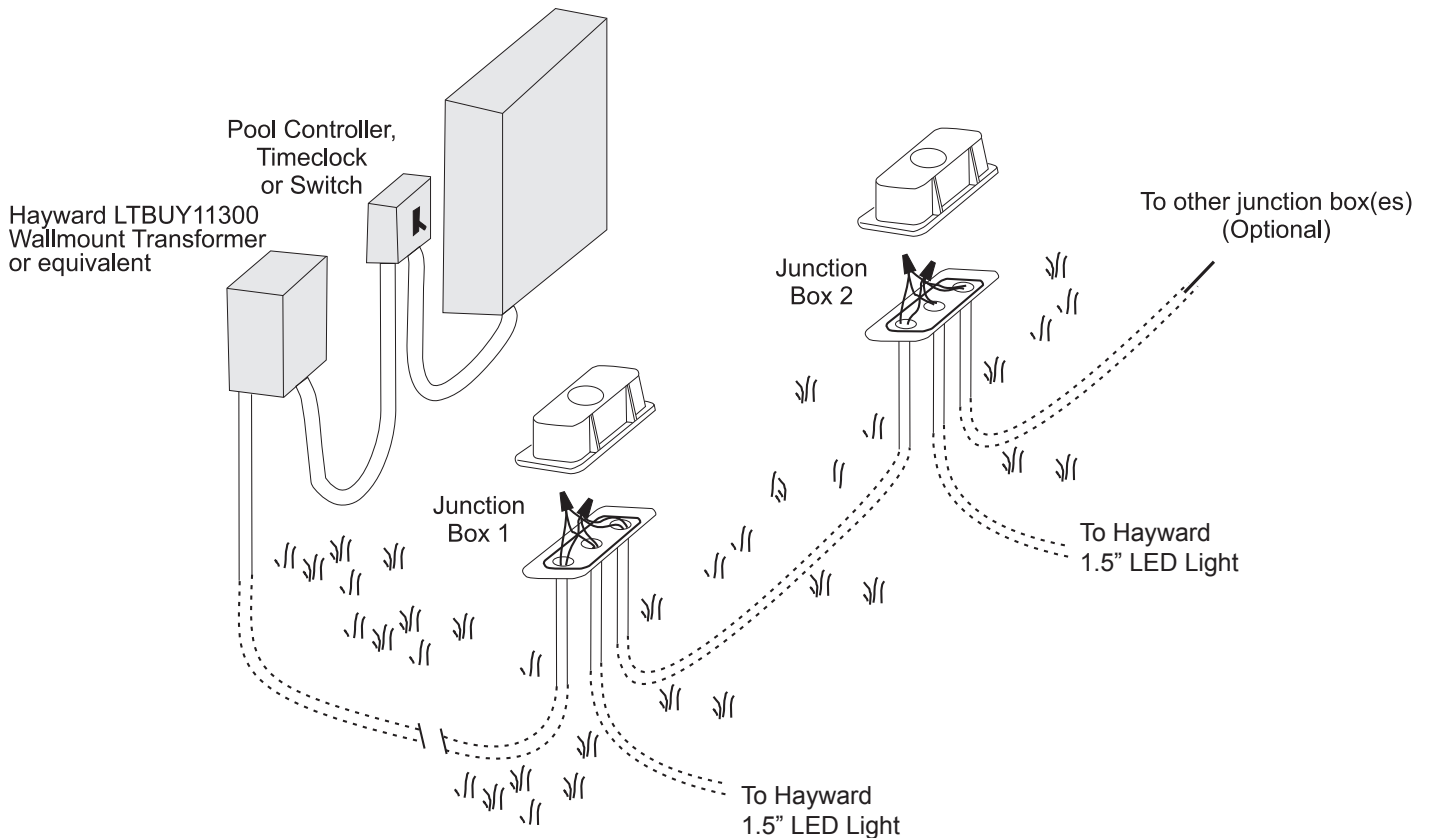


- 2) Insert the ColorLogic/CrystaLogic 1.5" LED light fully into the conduit. Insert the included hex nut tool into the 3 slots on the light face as shown.



- 3) Slide the ring tool over the nut tool and insert tabs into the light face. Hold the nut tool with a wrench while rotating the ring tool clockwise. Handtighten the ring tool until snug. Do not overtighten.





### Install Wiring using a Wallmount Transformer

A suitable transformer must be installed which is agency listed for low-voltage swimming pool and spa lights (Hayward LTBUY11300, Intermatic® model PX100/PX300, or equivalent). The transformer must be rated at or above the total wattage used by all attached light fixtures. Up to 6 ColorLogic/CrystalLogic 1.5" LED lights can be connected to a single Hayward LTBUY11300 transformer at the 14V tap.

Run conduit from the junction box to the low voltage transformer, pool/spa controller, or switch box. Snake 2 wires through the conduit from the junction box to the power supply. If multiple lights are being installed, run additional conduit/wires from the junction box to the additional junction box(es). When wiring multiple lights to the same 12 volt source, do not exceed the transformers's total rated wattage. Refer to the manufacturer's specifications and instructions for run length and wiring size. Use wire nuts to connect the field-installed wiring to the light fixture cord in the junction box.

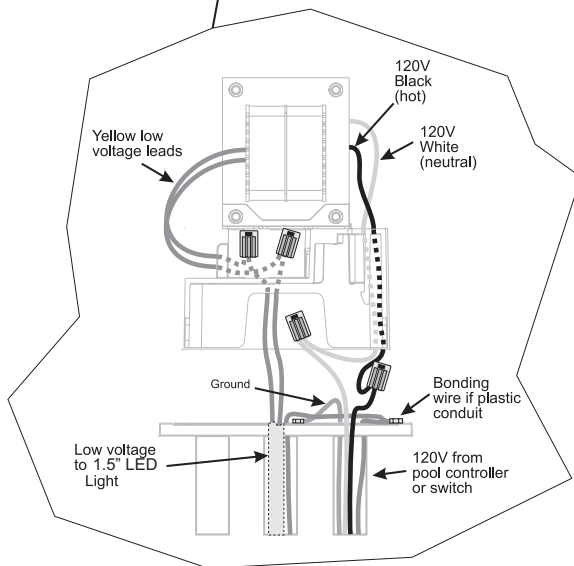
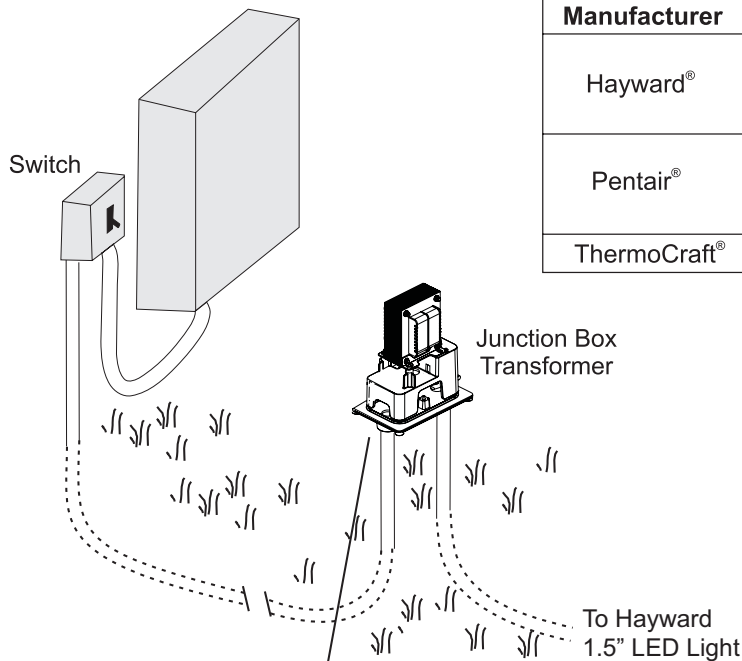


## Install Wiring using a Hayward Junction Box Transformer

Hayward offers pool/spa light transformers designed to fit into various manufacturer's junction boxes. Refer to the table on this page to determine which model transformer will fit your type of junction box. These transformers are designed to power up to two Hayward ColorLogic and/or CrystaLogic 1.5" LED lights. If more than two lights are installed, multiple junction box transformers must be used.

Run conduit from the junction box transformer to the pool/spa controller or switch box. Snake 3 wires through the conduit. Connect the ground wires to the ground terminal connections inside the junction box. Use wire nuts to connect the field-installed wiring to the 120V side of the transformer and the 1.5" LED light cord to the low voltage side of the transformer. Refer to wiring diagram below.

Junction Box Manufacturer	Junction Box Model	Hayward Transformer	Rating	Gang
Hayward®	Sp680 Sp681 LTBUY11H65	LRBUY11H65	70 watt	single
Pentair®	78310500 78310600 78310700	LRBUY11P65	70 watt	single
ThermoCraft®	JBP75175	LRBUY11T65	70 watt	single

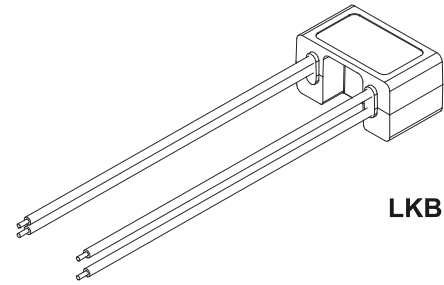






### For Network Control Only: Hayward LKBUN1000 Coupler

The Hayward LKBUN1000 is a coupler that is designed to be used with specific Hayward automation controls and an AQL-COLOR-MODHV Modem. Together, these components allow the user to have complete network control over the installed ColorLogic light(s) using the Pro Logic Controller. When using network control, custom colors and custom light shows can be programmed for each or all lights. An LKBUN1000 is required for each transformer in use and is designed to install into the Hayward LTBUY11300 300 Watt and Hayward Junction Box transformers. Refer to the LKBUN1000 installation manual for mounting and wiring instructions. See "Networking" on page 10.



**LKBUN1000**

## Operation

### Setting Brightness (LAWUS11xxx, LACUS11xxx and LACUN11xxx models only)

How to change brightness:

1. Turn light on and wait 15 seconds for show/color to launch.
2. Turn off light for between 11-15 seconds, then turn on.
3. Turn off light for between 11-15 seconds, then turn on.
4. Turn off light for between 11-15 seconds, then turn on.
5. The light should blink once or twice indicating which brightness setting is in use. Refer to the table below:

Mode	Indication
100% Brightness	double blink red
50% Brightness	single blink red

6. If you would like to change the setting, turn lights off and on 4 times quickly. The new brightness setting should be indicated.
7. When the desired brightness has been selected, remove power from the lights for at least one minute.
8. The light will restart with the desired brightness the next time it is turned on.

### Operating the ColorLogic

The ColorLogic light is controlled through power-cycling: a method of changing light programs which requires no special controller or interface. To activate the light, simply turn on the switch. To deactivate the light, turn off the switch. To advance to the next light program (fixed color or color show), turn the switch off, then back on within 10 seconds.

When the light has been off for over 60 seconds, and is first turned on, it will come on to white for 15 seconds for quick clear view of your pool, then go to the last fixed color or color show it was running.

### Light Synchronization

If your pool or spa has multiple Hayward ColorLogic LED lights, they may be operated independently, or they can be easily synchronized so they will all display the same colors and shows at the same time. For light synchronization, all lights must be wired to the same switch. Once installed, all lights should be automatically synchronized, however, if they get out of sync, they can be re-synchronized easily.

To re-synchronize your lights, start with the lights off and follow the steps below:

1. Turn lights on.
2. Turn off light for between 11-15 seconds,.
3. Turn lights on.

When the lights come on, they should enter program #1 (Voodoo Lounge), and be synchronized.



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## Programs

When in ColorLogic mode (default), the ColorLogic light has the capability to display 17 different programs; 10 fixed colors and 7 color-changing shows. These programs are advanced using power-cycling (quickly powering the lights on, then off, then back on). The programs are listed below:

1. Show-Voodoo Lounge
2. Fixed-Deep Blue Sea
3. Fixed-Royal Blue
4. Fixed-Afternoon Skies
5. Fixed-Aqua Green
6. Fixed-Emerald
7. Fixed-Cloud White
8. Fixed-Warm Red
9. Fixed-Flamingo
10. Fixed-Vivid Violet
11. Fixed-Sangria
12. Show-Twilight
13. Show-Tranquility
14. Show-Gemstone
15. Show-USA
16. Show-Mardi Gras
17. Show-Cool Cabaret

Refer to the included color card as a quick reference to the available programs.

## Networking

Using a ColorLogic modem AQL-COLOR-MODHV and Coupler LKBUN1000, owners of specific Hayward automation controls can network their LA-CUN11xxx and LYCUN11xxx model lights allowing them to fully control the color, speed, motion and brightness of preset light shows. If the lights will be networked, refer to the AQL-COLOR-MODHV ColorLogic Network module for operation instructions.

## Troubleshooting

If you have a problem with your Hayward ColorLogic or CrystaLogic light, please try the following tips before calling for service:

**PROBLEM:** ColorLogic Light will not advance to the next program when it is power-cycled (turned "off" and then back "on").

**SOLUTION:** Do not power-cycle the switch too rapidly. Leave it off for at least 1 second before turning it back on.

**PROBLEM:** ColorLogic Light goes to white whenever it is power-cycled (turned "off" and then back "on").

**SOLUTION:** Be sure that you power-cycle the light for less than 10 seconds.

**PROBLEM:** Multiple ColorLogic Lights are not correctly synchronized.

**SOLUTION:** Refer to page 9. Follow the steps in these instructions to re-synchronize the lights.

**PROBLEM:** Light will not come on.

**SOLUTION:** Check input power to transformer and then light. Check ground fault and reset if necessary.

**PROBLEM:** Light will not come on or light cycles on and off.

**SOLUTION:** Depending on cord length and operating voltage, automatic thermal switch may be cycling due to excessive air/pool water temperatures (over 105°F). For ColorLogic lights, temporarily switch to a cooler color (Deep Blue Sea, Royal Blue, etc.) until air/water temperatures cool off.



## Hayward® Pool Products Limited Warranty

To original purchasers of this equipment, Hayward Pool Products, Inc. warrants its Universal ColorLogic® and CrystaLogic™ pool and spa lights, niches, pool light transformers, and couplers to be free from defects in materials and workmanship for a period of ONE (1) year from the date of purchase, when used in single family residential applications.

The limited warranty excludes damage from freezing, negligence, improper installation, improper use or care or any Acts of God. Parts that fail or become defective during the warranty period shall be repaired or replaced, at our option, within 90 days of the receipt of defective product, barring unforeseen delays, without charge.

Proof of purchase is required for warranty service. In the event proof of purchase is not available, the manufacturing date of the product will be the sole determination of the purchase date.

To obtain warranty service, please contact the place of purchase or the nearest Hayward Authorized Service Center. For assistance on your nearest Hayward Authorized Service Center please visit us at [www.hayward.com](http://www.hayward.com).

Hayward shall not be responsible for cartage, removal, repair or installation labor or any other such costs incurred in obtaining warranty replacements or repair.

The Hayward Pool products warranty does not apply to components manufactured by others. For such products, the warranty established by the respective manufacturer will apply.

The express limited warranty above constitutes the entire warranty of Hayward Pool Products with respect to its' pool products and is in lieu of all other warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose. In no event shall Hayward Pool products be responsible for any consequential, special or incidental damages of any nature.

Some states do not allow a limitation on how long an implied warranty lasts, or the exclusion of incidental or consequential damages, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

FOR FURTHER INFORMATION OR CONSUMER  
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