

Universal ColorLogic® and CrystaLogic™

LED Light Fixtures

Pour obtenir le manuel de l'usager en Français consultez www.hayward-pool.ca.

Owner's Manual



LPCUS22xxx, LPLUS22xxx, LPWUS22xxx

Hayward Industries 400 Connell Drive, Suite 6100 Berkeley Heights, NJ 07922 Phone: (908) 355-7995

www.hayward.com



IMPORTANT SAFETY INSTRUCTIONS

The ColorLogic and CrystaLogic LED Light Fixtures are low voltage Submersible Luminaires.

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 18 in. and no more than 72 in. below the normal water level of the pool.

Model	Input (Volts, Frequency, Amps, Watts)	Equivalent Brightness	Lumens
LPC	14 VAC, 60 Hz, 3.2A, 45W Max	-	2700
LPW	14 VAC, 60 Hz, 3.2A, 45W Max	500 Watts	4900
LPL	14 VAC, 60 Hz, 2.6A, 37W Max	300 Watts	3250

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 manu- lowed.	ıal have been read and fol-
	A SAFETY LISTED POOL/SPA ISOLATION TRANSFORMER HAS BEEN USED THE FIXTURE.	TO SUPPLY 14 VOLTS TO
	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 junct former system.	ion box or junction box trans-
	The luminaire is firmly secured to the niche and cannot be removed without the u	se of a tool.
	The niche is properly bonded UNLESS a Hayward Universal ColorLogic Niche (Lis used.	FGUY1000 or LGGUY1000)
	The luminaire has been installed by qualified personnel in compliance with the Na or Canadian Electric Code (CE Code) and any applicable local codes and/or regu	
	Cord has been attached and secured to the light.	
Installe	d by: of company	Date:

LEAVE THESE INSTRUCTIONS WITH PROPERTY OWNER



Introduction

Congratulations on your purchase of a Hayward® Universal ColorLogic®/CrystaLogic™ LED Light. Welcome to a more colorful world, brought to you by Hayward, that generates colored light and effects using a microprocessor to control red, green, blue, and white LED's!

Your Hayward Universal ColorLogic/CrystaLogic underwater pool or spa light has these special features:

- 1. Detachable light cord which allows you to change/replace lights without rewiring or snaking new light cord.
- 2. Long-lasting LED's (light-emitting diodes) which can last up to 10 times longer than current incandescent or halogen pool and spa lights.
- 3. In stand-alone mode, Universal ColorLogic lights offer 17 different programs; 10 fixed colors, and 7 color shows.
- 4. In Omni Direct mode (requires a compatible Hayward Omni pool controller), LPCUS22xxx and LSCUS22xxx Universal ColorLogic lights offer 20 fixed colors and 7 color shows with full control over speed and brightness.
- 5. CrystaLogic models offer programmable dimming (page 3).
- Universal ColorLogic/CrystaLogic lights offer spectacular brilliant light with low power consumption. Uses up to 86% less energy than a typical incandescent pool light.

The 12 volt Hayward Universal ColorLogic and CrystaLogic LED (light-emitting diode) underwater lighting fixtures you have purchased are UL Listed to be installed in all Hayward or any other manufacturer's light fixture housing (niche).

Installation of light and niche must be in accordance with Article 680 of the National Electrical Code (NEC) and any applicable local codes. Ensure that your niche is properly grounded and bonded. NOTE: the Hayward LFGUY1000 low profile, all plastic niche does not require bonding or grounding.

Because of the all plastic design with an impact resistant lens, these lights can be installed as little as 18 inches (45cm) 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.

Important Note When Installing LFGUY1000 Niches in Concrete/Gunite Pools:

LFGUY1000 Niche: A gunite/plaster shield is provided to protect the niche and ring during construction. The shield is designed to be installed during the gunite and plastering process. When finished guniting, pull on the tab and remove the outer ring of the shield. Keep the shield in place while plastering and until the light is ready to be installed.

GIVE THESE INSTRUCTIONS TO POOL/SPA OWNER AFTER INSTALLATION



Operation

For installation information, see page 6

Universal ColorLogic Light modes

The Hayward Universal ColorLogic light is designed to operate in one of 5 modes; Universal ColorLogic, ColorLogic 4.0, ColorLogic 2.5 & earlier, Pentair SAM and Omni Direct mode. For Omni Direct mode, the lights must be used with an OmniLogic or other Omni type pool controller (page 4).

Universal ColorLogic mode (default): The light is shipped in this mode. Use this mode for new installations and for installations with other Universal ColorLogic lights.

ColorLogic 4.0 mode: Use this mode when installing your new light in systems with ColorLogic 4.0 lights. The Universal ColorLogic light will be "seen" as another ColorLogic 4.0 light and will operate in the same manner as the others.

ColorLogic 2.5 & earlier mode: Use this mode when installing your new light in systems with ColorLogic 2.5 & below lights. The Universal ColorLogic light will be "seen" as another ColorLogic 2.5 & earlier light and will operate in the same manner as the others.

Pentair SAM: Use this mode when installing your new light in systems with Pentair SAm® or SAL® lights. The Universal ColorLogic light will be "seen" as another Pentair SAm®/SAL® light and will operate in the same manner as the others.

Omni Direct mode: Omni Direct mode offers unique colors as well as speed and brightness control. It must be configured and controlled by a Hayward OmniLogic, OmniHub or other Omni type pool controller. Refer to the controller's manual for more information.

How to change modes:

- 1. Turn on lights and then turn off for between 11-15 seconds.
- 2. Turn on lights and then turn off for between 11-15 seconds.
- 3. Turn on lights and then turn off for between 11-15 seconds.
- 4. The light should blink one of 5 colors indicating which mode it is currently in. Refer to the table below to determine which mode is currently active. Note that new lights are shipped from the factory in Universal ColorLogic mode (blinking red).

MODE	COLOR
Universal ColorLogic	Red
ColorLogic 4.0	Green
ColorLogic 2.5	Blue
Pentair SAM	White
Omni Direct	Purple

- 5. To change modes, turn light off and back on. The light will then advance to the next mode. Continue this method until you arrive at the desired mode.
- 6. When the light is in the desired mode, remove power from the lights for at least one minute.
- 7. The light will restart in the new mode the next time it is turned on.

CrystaLogic Light Dimming (White Light)

The CrystaLogic light can be adjusted to operate at different light intensities. To change light intensity, follow the procedure below.

- 1. Turn on lights and then turn off for between 11-15 seconds.
- 2. Turn on lights and then turn off for between 11-15 seconds.
- 3. Turn on lights and then turn off for between 11-15 seconds.
- 4. The light will blink indicating which mode it is currently in:
 - Mode 1 (1 blink) 100% intensity
 - Mode 2 (2 blinks) 60% intensity
 - Mode 3 (3 blinks) Variable intensity, Once the desired mode is saved, the user may select among 5 brightness levels by briefly toggling power (100%, 80%, 60%, 40%, 20%, 40%, 60%, 80%, 100%, 80%, etc.)
- 5. To change modes, turn light off and back on. The light will then advance to the next mode. Continue this method until you arrive at the desired mode.
- 6. To save, remove power from the lights for at least one minute.
- 7. The light will restart in the new mode the next time it is turned on.



Operating the Universal ColorLogic

The Universal 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. **Note: Do not power cycle the light during the first 15 seconds of white to preclude risk of loss of synchronization with other connected lights.**

Light Synchronization

If your pool or spa has multiple Hayward Universal 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, turn the switch on, then back off, then wait between 11 and 14 seconds and turn the switch back on. When the lights come back on, they should enter program #1, and be synchronized.

Programs

When in Universal ColorLogic mode (default), the Universal 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 10. Fixed-Vivid Violet Fixed-Deep Blue Sea 11. Fixed-Sangria Fixed-Royal Blue 12. Show-Twilight Fixed-Afternoon Skies 13. Show-Tranquility 5. Fixed-Agua Green 14. Show-Gemstone 6. Fixed-Emerald 15. Show-USA Fixed-Cloud White 16. Show-Mardi Gras 7. Fixed-Warm Red 17. Show-Cool Cabaret

9. Fixed-Flamingo

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

Omni Direct

Omni Direct mode offers some unique colors as well as speed and brightness control. The programs are listed below. To use Omni Direct mode, LPCUS22xxx and LSCUS22xxx Universal ColorLogic lights must be configured and controlled by a supporting Hayward "Omni" pool control. Compatible pool controls include the Hayward OmniLogic, OmniHub and OmniPL. Refer to your control's manual to determine compatibility and for specific information about configuration and operation.

Show-Voodoo Lounge
 Fixed-Deep Blue Sea
 Fixed-Royal Blue
 Fixed-Afternoon Skies
 Show-USA
 Show-Mardi Gras
 Show-Cool Cabaret
 Fixed-Yellow

Fixed-Aqua Green
 Fixed-Fixed-Gold
 Fixed-Cloud White
 Fixed-Mint

Fixed-Cloud White
 Fixed-Warm Red
 Fixed-Flamingo
 Fixed-Burnt Orange

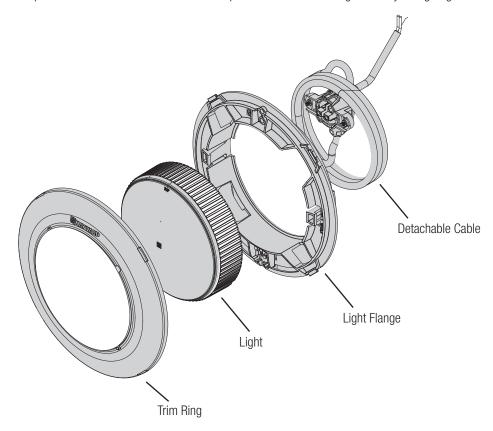
10. Fixed-Vivid Violet
11. Fixed-Sangria
12. Show-Twilight
24. Fixed-Pure White
25. Fixed-Crisp White
26. Fixed-Warm White

13. Show-Tranquility 27. Fixed-Bright Yellow 14. Show-Gemstone

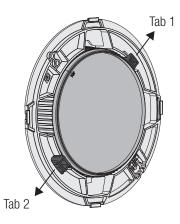


Overview

The new Hayward ColorLogic and CrystaLogic lights offer a modular design for quick easy installation and replacement. The four piece design allows you to separate the trim ring, light flange, light and power cable. The watertight plug-in power cable lets you replace the light at anytime without having to snake new wire through conduit, or make new wiring connections at the transformer. Also, the light can be replaced without having to reinstall the flange to the niche, making installation quick and simple. The illustration below shows the four parts to the new ColorLogic and CrystaLogic lights.



Note that the light and flange are shipped from the factory as an assembly. For most installations, it will be easier to keep these parts together. If your installation requires you to remove the light from the flange, refer to the diagram below.



Spread both locking tabs outward as shown. With the tabs spread, pull the light out of the flange.

This method can also be used if the light requires replacement after installation. There is no need to remove the flange from the niche; just remove the light using the method above.



Before You Begin

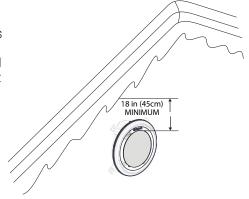
Cord Length and Minimum Required Voltage Considerations

When installing Universal ColorLogic/CrystaLogic 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.

Product	Total Cord Length from Transformer to Light	Minimum Required Voltage at Transformer
12v Universal	30 ft	12 - 14 volts
ColorLogic or CrystaLogic	50 ft	13 - 14 volts
Pool Light	100 ft	14 volts
12v Universal	30 ft	12 - 14 volts
ColorLogic or CrystaLogic	50 ft	13 - 14 volts
Pool Light	100 ft	14 volts

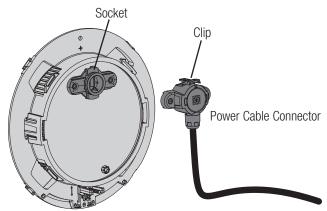
Mounting Location and Height

The light fixture must be installed in a wall or on a floor of the pool or spa with the top of the lens not less than 18 inches (45 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.



Verify Connection

The ColorLogic and CrystaLogic power cable comes attached to the light from the factory. If the cable needs to be removed, it's important that the cable be reinstalled properly. Refer to the information below when reinstalling the power cable. Check that the power cable is securely fastened before installing the ColorLogic or CrystaLogic light.



Plug the power cable connector into the socket on the backside of the light as shown. The clip on the top of the connector should firmly lock into the socket on the light.



Tighten the screws

After fully seating the connector, use a screwdriver to secure. Just snug the fasteners and be careful not to overtighten (screw torque does not affect water tightness). To remove the cable, fully loosen the screws, push down on the clip to release and then pull the connector out of the socket.

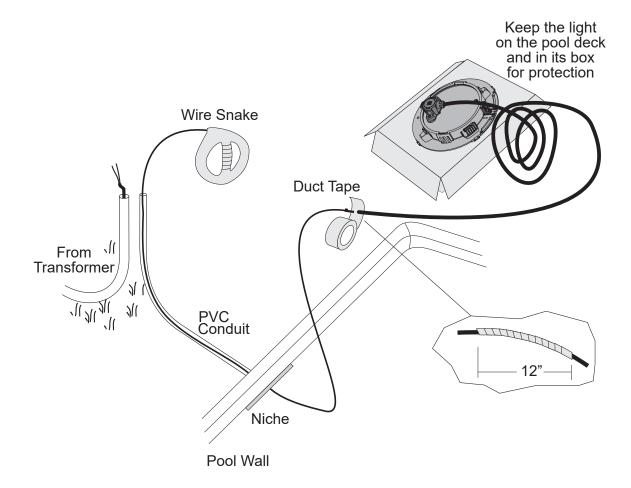


Routing the Light Cord

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

Route the light cord through the niche and conduit to the location of the junction box or transformer. Refer to the diagram below.

Note: If the light cord requires replacement for any reason, use only Hayward part GLXLPCORD100. Refer to page 12 for replacement parts.

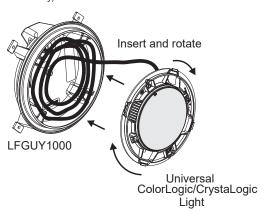




Mounting

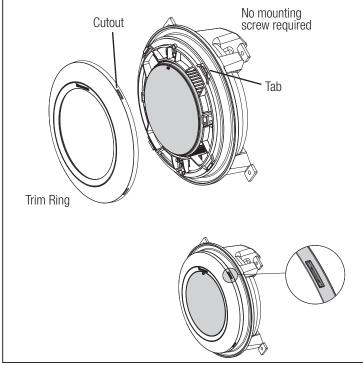
Hayward Niche LFGUY1000

The Universal ColorLogic/CrystaLogic Light offers a unique tool-less design when used with the Hayward LFGUY1000 niche. With the power cord routed to the junction box or transformer, coil up 3-4ft of extra cord (up to 15ft can be coiled if necessary) and insert it in the LFGUY1000 niche.



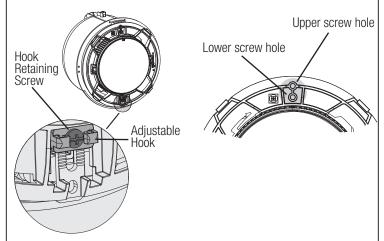
To mount the light, insert it into the niche and twist the light flange clockwise until it firmly locks. The mounting hole should now be at the 12 o'clock position.

Install the trim ring by locating the four tabs on the light flange and aligning the four cutouts on the trim ring. Gently snap the trim ring on to the light flange in all four locations. Note that the mounting screw hole in the trim ring will not be used with the LFGUY1000 niche. Refer to the diagrams below.



All other Niches

The Universal ColorLogic/CrystaLogic lights have multiple screw hole and hook positions to fit most every niche. Before mounting, examine the light flange paying particular attention to the adjustable hook (6 o'clock) and the two mounting screw hole positions (12 o'clock). The hook can slide up and down and will adjust to a position that will align one of the two mounting screw holes with the niche screw hole.

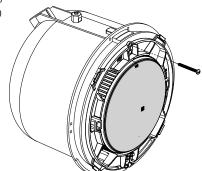


The optimum position for the hook is when it rests solidly on the niche while either of the two mounting screw holes line up with the niche's screw hole. In this position, the hook will retain the bottom of the light flange into the niche. Test fit the light into the niche to determine the best position for the hook. Once that position is found, tighten the hook retaining screw slightly to ensure that the adjustment won't change during installation.

Note: The mounting screw used to secure the light flange can be found attached to one of the trim rings. Two types of trim rings are supplied; one with a mounting hole and one without. Because the trim rings snap onto the light flange, almost all installations will use the trim ring without a mounting hole. There may be an application where the other trim ring is desired and if so, it has been provided. If used, the mounting screw should go through the trim ring mounting hole, the light flange, and then fasten to the niche.

Coil up 3-4ft of extra cord and insert it in the niche behind the light flange.

Position the hook so that it catches on the niche and then pivot the top of the light into the niche. Thread the mounting screw to fasten the light flange to the niche.





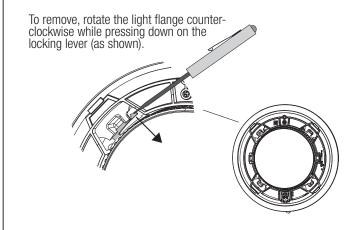
Hayward Niche LFGUY1000 (cont.)

Trim Ring Removal

Remove the trim ring by locating the tabs that have been inserted into the trim ring cutouts (shown previously on page 8). With a small flat head screwdriver, gently pry the trim ring off of each tab until the trim ring comes free.

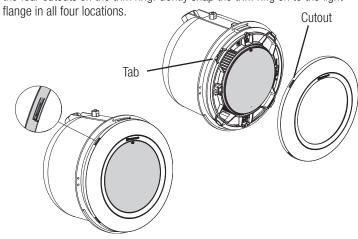
Light Flange Removal

With the trim ring removed, insert a #2 phillips head or any small screwdriver into the access hole at the molded latch shown below. Gently pry the latch away from the catch so that you can twist the light flange counter clockwise. Twist the light flange until it comes free from the niche.



All other Niches (cont.)

Install the trim ring by locating the four tabs on the light flange and aligning the four cutouts on the trim ring. Gently snap the trim ring on to the light



Trim Ring Removal

Remove the trim ring by locating the tabs that have been inserted into the trim ring cutouts (shown above). With a small flat head screwdriver, gently pry the trim ring off of each tab until the trim ring comes free.

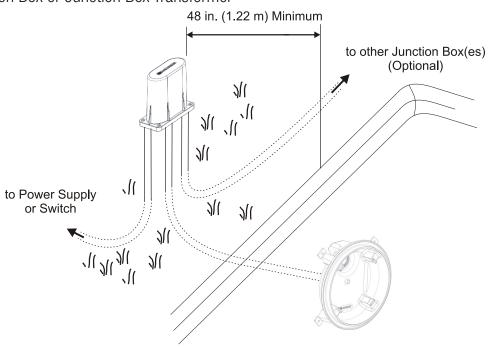
Note: For some installations into Sta-Rite® and SwimQuip® niches, the bottom hook may need to be removed. If so, removing the hook retaining screw will allow you to remove the hook from the light flange.

Wiring

Considerations when Installing a 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 (LTBUY11H65) can be used when in-line transformers are desired. Refer to page 11 for more information.

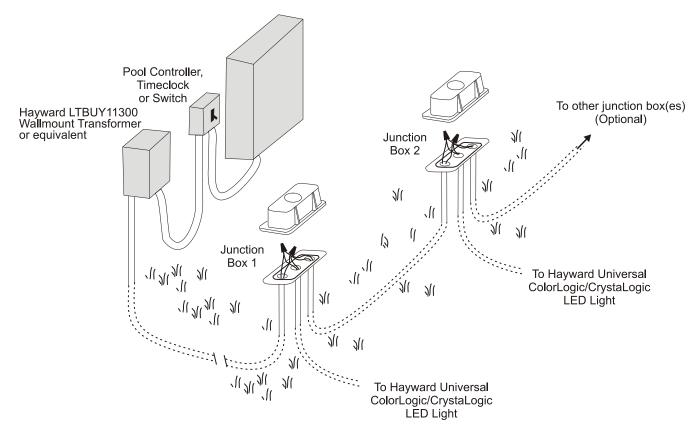
Junction boxes must be installed not less than 48 inches (1.22 m) from the edge of the pool or spa. Run conduit from the niche up to the junction box such that the junction box is not less than 8 inches (20 cm) above the maximum pool or spa water level, or not less than 4 inches (10 cm) above the ground,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





Wiring Connection to a Wallmount Transformer

A suitable transformer that is agency listed for low-voltage swimming pool and spa lights (Hayward LTBUY11300, Intermatic® model PX100/PX300, or equivalent) must be used. The transformer must be rated at or above the total wattage used by all attached light fixtures. Up to four Universal ColorLogic/ CrystaLogic LED lights (three pool lights max.) can be connected to a single Hayward LTBUY11300 transformer. 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.





Wiring Connection to 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 a single Hayward ColorLogic/CrystaLogic LED light. If more than one light is 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 Universal ColorLogic/CrystaLogic LED light cord to the low voltage side of the transformer. Refer to wiring diagram below.

Junction Box

Model

Sp680

Sp681

78310500

78310600

78310700

JBP75175

Hayward

Transformer

LRBUY11H65

LRBUY11P65

LRBUY11T65

Rating

70 watt

70 watt

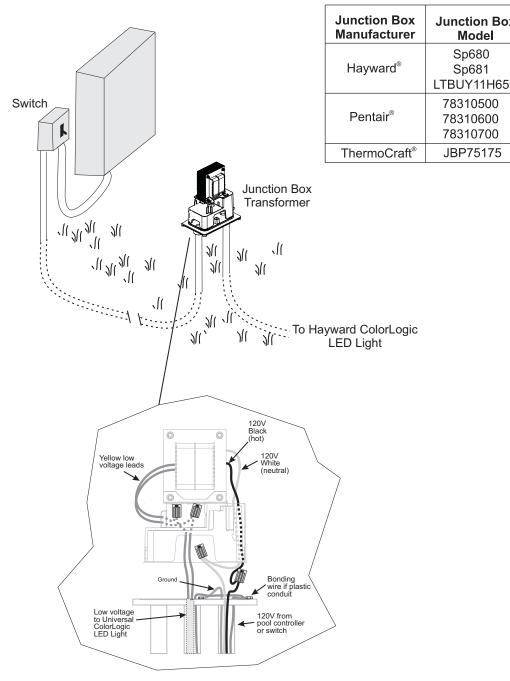
70 watt

Gang

single

single

single





Troubleshooting

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

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

SOLUTION1: Do not power-cycle the switch too rapidly. Leave it off for at least 1 second before turning it back on.

SOLUTION2: Make sure that the light is in the proper mode (page 3).

PROBLEM: Universal 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 Universal ColorLogic Lights are not correctly synchronized.

SOLUTION: Verify that the Universal ColorLogic light is in the proper mode (page 3). 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). Temporarily switch to a cooler color (Deep Blue Sea, Royal Blue, etc.) until air/water temperatures cool off.

PROBLEM: GFCI trips when lights are turned on or off.

SOLUTION: Install a Hayward GLX-HAL-XSNUB snubber capacitor across the primary leads (line to neutral) of the transformer on the load side of the light

switch or relay.

Replacement Parts

Pool Light Parts

ITEM	PART NUMBER	DESCRIPTION	QTY
1	LNVUY2000	Standard Pool Trim Rings (2 pack)	1
2	LNZUY2000	Stainless Pool Trim Ring	1
3	SPX0800Z1	Metal Light Screw Kit	1
4	SPX0800RW	Space Washer for Pool Light	1
5	GLXLPCORD100	100ft Light Cord	1

Spa Light Parts

ITEM	PART NUMBER	DESCRIPTION	QTY
1	LQ(x)UY1000	Spa Trim Rings	1
2	SPX0800Z1	Metal Light Screw Kit	1





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.

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 TECHNICAL SUPPORT, VISIT OUR WEBSITE AT www.hayward.com





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