



INTELLIBRITE® 5G

WHITE AND COLOR POOL AND SPA LIGHTS



INSTALLATION AND USER'S GUIDE

IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS

Technical Support: Phone: (800) 831-7133 - Fax: (800) 284-4151

Web site: www.pentair.com

Contents

IMPORTANT WARNING AND SAFETY INSTRUCTIONS.....	iii-iv
IntelliBrite 5G Pool and Spa Lights Overview	1
Operating IntelliBrite Pool and Spa lights using a wall switch (12 VAC)	1
Using an External Transformer for Multiple IntelliBrite 12 VAC Lights	1
Powering on IntelliBrite 5G Lights	2
Selecting a light show mode or fixed color (Color Lights)	2
Using an IntelliBrite Color Light Controller	2
Replacing the IntelliBrite 5G Pool and Spa Light Fixture (in an existing pool/after electrical requirements are met)	3/5
IntelliBrite 5G Pool and Spa Light Fixture Installation (new pool construction - GFCI Installation Requirements (USA)	6/7
IntelliBrite 5G Pool and Spa Light Fixture Installation (new pool construction (Canada)	7
Junction Box/GFCI Installation Requirements (Canada)	8
Installing the IntelliBrite 5G Pool and Spa Light Fixture (after electrical requirements are met)	9
IntelliBrite 5G Pool Light (12 V) Fuse Harness Replacement Overview	11
Replacing the IntelliBrite 5G Pool Light Circuit Board Assy (existing pool).....	12
Installing the IntelliBrite Light Assembly, new gasket/Uni-tension Wire Clamp .	15
Wide and Narrow Angle Lens Adjustment/Part Numbers	19/20
Replacing the IntelliBrite Spa Light Fixture (existing pool)	21
IntelliBrite 5G Spa Light Replacement Kit Part Numbers	25

Before Installing luminaries read the following:



Always install a new Uni-Tension Wire Clamp assembly and Lens Gasket (see page 19), when reassembling the light assembly. Failure to do so may permit water to leak into the assembly which could cause; (a) an electrical hazard resulting in death or serious injury to pool users, installer, or others due to electrical shock, or (b) breakage of the lamp or lens, which likewise could result in serious injury to pool user, installers, or bystanders, or in damage to property.

FOR 12 VAC LUMINARIES: ALWAYS USE A SEPARATE STEP DOWN TRANSFORMER TO POWER LUMINARIES. SEE DIAGRAM ON PAGE 7. Note: Connect all three wires to the corresponding circuit wires in the Junction Box (black wire to power, white wire to common, and green wire to ground). 12 VAC LUMINARIES SPECIFICATION: 50/60 Hz. REPLACE ANY CRACKED PROTECTIVE SHIELD (CRACKED LENS) WITH NEW LENS AND GASKET.



THE INTELLIBRITE 5G LED POOL LIGHT AND SPA LIGHT CANNOT BE USED ON A DIMMER CIRCUIT. USING A DIMMER SWITCH WILL RESULT IN PERMANENT DAMAGE TO THE LIGHT.

IMPORTANT WARNING AND SAFETY INSTRUCTIONS



SERIOUS BODILY INJURY OR DEATH CAN RESULT IF THIS LIGHT IS NOT INSTALLED AND USED CORRECTLY.



INSTALLERS, POOL OPERATORS AND POOL OWNERS MUST READ THESE WARNINGS AND ALL INSTRUCTIONS BEFORE USING THE POOL AND/OR SPA LIGHT.



Most states and local codes regulate the construction, installation, and operation of public pools and spas, and the construction of residential pools and spas. It is important to comply with these codes, many of which directly regulate the installation and use of this product. Consult your local building and health codes for more information.



IMPORTANT NOTICE - Attention Installer: This Installation and User's Guide ("Guide") contains important information about the installation, operation and safe use of this underwater pool and spa light. This Guide should be given to the owner and/or operator of this equipment.



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. Call (800) 831-7133 for additional free copies of these instructions. Please refer to www.pentairpool.com for more information related to this products.



RISK OF ELECTRICAL SHOCK OR ELECTROCUTION: THE INTELLIBRITE® POOL AND SPA LIGHT REQUIRE HIGH VOLTAGE WHICH CAN SHOCK, BURN, OR CAUSE DEATH. BEFORE WORKING ON POOL AND SPA LIGHTS always disconnect power to the pool and/or spa lights at the circuit breaker from the light before servicing the light. Failure to do so could result in death or serious injury to service person, pool users or others due to electric shock.

This underwater light must be installed by a licensed or certified electrician or a qualified pool professional in accordance with the current National Electrical Code (NEC), NFPA 70 or the Canadian Electrical 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, and may also cause damage to property. Always disconnect the power to the pool light at the circuit breaker before servicing the light. Failure to do so could result in death or serious injury to serviceman, pool users or others due to electrical shock.



Important Safety Information for Pentair Water Pool and Spa Niche and Light Installation

- All Niche and Light installations must conform with all codes. If local codes mandate a cord seal, use Pentair Water Pool and Spa plastic niches (P/N 79206600 and P/N 79206700) and Cord Seal Kit (P/N 670044).
- Under **no circumstances** replace lights by splicing wire under water or behind niche.



READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL.

IMPORTANT WARNING AND SAFETY INSTRUCTIONS

⚠ WARNING **RISK OF ELECTRIC SHOCK AND INJURY. USE ONLY THE INSTALLATION METHOD SPECIFIED BELOW.**

Location of Luminaire Use	Pentair Water Pool and Spa Fountain Fixture* (P/N 560001 and P/N 560000)	Required Installation Method
Swimming Pool and Spa	Wet-Niche Swimming Pool (or Spa) Luminaire (Light)	Fixture Housing (Forming Shell) ONLY. DO NOT USE Fountain Fixture Stand.
Fountain	Wet-Niche Submersible Luminaire (Light) swimming Pool (or Spa) Luminair (Light)	Fixture Housing (Forming Shell) or Fountain Fixture Stand

(*) Note: Wet-niche luminaires complying with requirements for both uses may bare both the Listed Wet-Niche Submersible Luminaires UL Mark. A luminaire not bearing the corresponding UL Listing Mark is not considered by UL to have been produced under UL's Listing and Follow-Up Service for the associated usage location.


CAUTION - The IntelliBrite® 5G Light fixture must only be used with Pentair Water Pool and Spa fixture housings (niches). If the IntelliBrite light fixture is installed into other niches, the installation will not carry U.L. approval and will void all warranties.

NOTICE: The external flexible cable or cord of this luminaire cannot be replaced; if the cord is damaged, the luminaire shall be destroyed.

⚠ WARNING **For countries in compliance with International Electromechanical Commission (IEC) regulatory standards:** The light fixture must be installed by a licensed or certified electrician or a qualified pool service person, in accordance with IEC 364-7-702 and all applicable local codes and ordinance. Improper installation will create an electrical hazard, which could result in death or serious injury to pool user, installer or other due to electrical shock and may also cause damage to the property.

⚠ WARNING Salt is an inherently corrosive material. While the levels of salt required for proper operation of an electronic chlorine generator are relatively low when compared to sea water and other salt solutions, placing any amount of salt in your pool increases the likelihood of corrosion or other deterioration of pool equipment and any surfaces used in and around your pool. Metal parts and certain natural and man-made surfaces are particularly susceptible to corrosion and deterioration when used in and around salt water pools. Pentair does not represent or otherwise guarantee that the proper use of an electronic chlorine generator will prevent corrosion or other deterioration of pool equipment and any surfaces used in and around your pool. Consult your experienced pool professional, who should be able to advise you on the proper material selection, installation techniques for those materials, and the proper use, care and maintenance of those materials for your specific pool type and location in order to minimize the corrosion and deterioration that is inherent in and around salt water pools.

POOL AND SPA FIXED LUMINARIES: Follow these guidelines when installing, replacing or repairing Pentair Aquatic Systems Pool and Spa fixed luminaries: **REPLACE ANY CRACKED PROTECTIVE SHIELD (CRACKED LENS) WITH NEW LENS AND GASKET. FOR MORE INFORMATION SEE PAGE 11.**
FOR LIGHT OPERATION, ONLY USE A SAFETY ISOLATION TRANSFORMER.

CAUTION! Luminaires not suitable for direct mounting on normally flammable surfaces (suitable **ONLY** for mounting on non-combustible surfaces). Fixed pool and spa luminaries specification:
12 VAC 50/60 Hz - 120VAC  ,50/60 Hz.



IntelliBrite® 5G Pool and Spa Lights Overview

This manual describes how to install the IntelliBrite 5G white and color pool light and the IntelliBrite 5G white and color spa light.

The IntelliBrite 5G white light provides a brilliant white light for a spectacular effect in your pool and spa. The IntelliBrite 5G white light lens geometry (pool light only) provides a choice between two light beam shapes; wider coverage with less intensity, or narrower coverage with more intensity.

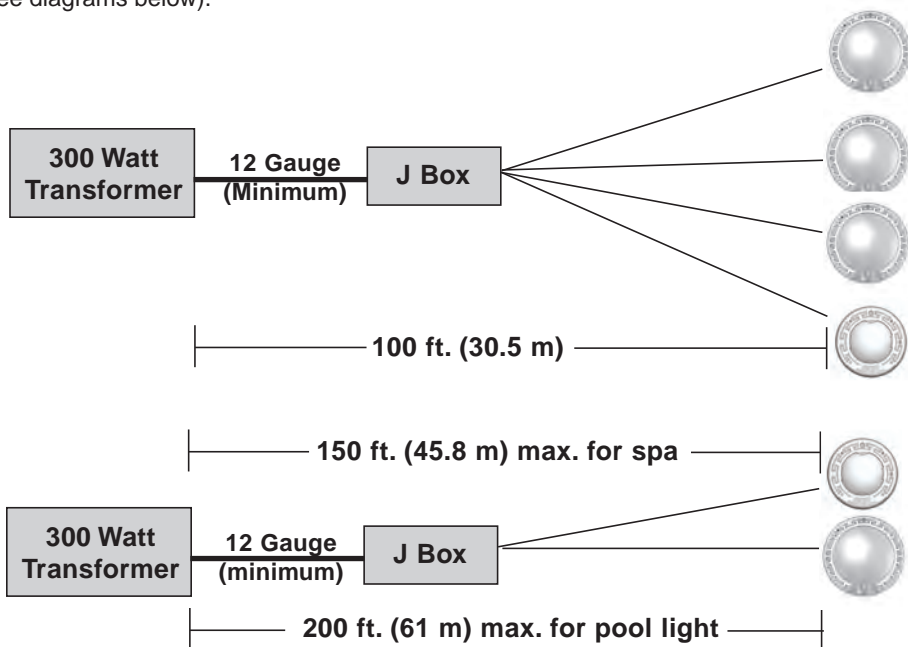
The IntelliBrite 5G color light provides brilliant vivid multi-colors with spectacular effects for your pool and spa. Choose one of the seven pre-programmed color light shows or select one of the five fixed colors to create virtually endless range of dramatic underwater lighting effects for a spectacular effect in your pool and spa.

Operating Pool and Spa Lights Using a Wall Switch (12 VAC)

IntelliBrite 5G pool and spa lights can be manually controlled using a standard wall-mount light switch. Multiple IntelliBrite lights can be connected via a junction box to a single switch so that all lights can be switched on and off together. IntelliBrite lights can also be automatically controlled via Pentair IntelliTouch®, EasyTouch® and SunTouch® Control Systems. **Note: Multiple IntelliBrite 5G pool/spa lights can also be controlled using the IntelliBrite Controller, for more information see page 2.**

Using an External Transformer for Multiple IntelliBrite 12 VAC Lights

When using multiple IntelliBrite 12 VAC lights on a **300 Watt** transformer, it is recommended that no more than three IntelliBrite pool lights and one IntelliBrite Spa light be used. It is also recommended not to exceed 100 ft (30.5 m) of total cable run between the transformer and light. Note: For long cable lengths, set the transformer to 14 VAC (see diagrams below).



Powering on IntelliBrite® 5G Color Lights

When the IntelliBrite light is powered on, a momentarily white light will illuminate, followed by the previously selected color. Note: If power to the light is off for more than five seconds, the last color show mode or fixed color that was saved will be displayed.

Selecting a light show mode or fixed color

Switch power on to the light. A white light will momentarily illuminate, followed by the previously selected color. To select a color show mode (1-7) or fixed color (8-12), turn the wall switch off/on a specific number of times. Each number (1-12) shown below corresponds to the number of times to power-cycle the switch to activate a color light show or fixed color. For details about saving color effects while in "show" modes, see "Hold" and "Recall" feature on page 3. Example: To select California Sunset Mode; turn the light on, then turn off and on six times. During the off/on switching process, no illumination will occur,

Number of times to cycle power (1-5)	1	SAM Mode: Cycles through white, magenta, blue and green colors (emulates the Pentair SAM® color changing light).	Number of times to cycle power (6-14)	6	California Sunset Mode: Dramatic transitions of orange, red and magenta tones.
	2	Party Mode: Rapid color changing building energy and excitement.		7	Royal Mode: Richer, deeper color tones.
	3	Romance Mode: Slow color transitions creating a mesmerizing and calming effect.		8	Blue: Fixed color.
	4	Caribbean Mode: Transitions between a variety of blues and greens.		9	Green: Fixed color.
	5	American Mode: Patriotic red, white and blue transition.		10	Red: Fixed color.
				11	White: Fixed color.
				12	Magenta: Fixed color.
				13	Hold: Save the current color effect during a color light show.
				14	Recall: Activate the last saved color effect.

Saving a Color Mode or Fixed Color: When power is switched off to the IntelliBrite color lights, the last color show mode or fixed color will be saved. The next time the light is powered on, the previously saved color show mode or fixed color will be displayed. For example, while in "Party Mode" switch the light off. Wait more than 10 seconds, switch the light back on to resume "Party Mode."



WARNING During the off/on switching process, before the selected color is displayed, no illumination will occur for a brief second. This operating mode is normal during the switching process. During this period the pool and spa will be dark and precautions should be taken to avoid unforeseen accidents. Failure to observe this warning may result in serious injury or death to pool and spa users.

Using an IntelliBrite Color Light Controller

Using the IntelliBrite Controller (sold separately, P/N 600054), IntelliBrite 5G color pool/spa lights can all be synchronized so that individual or multiple IntelliBrite lights all lights can be switched on and off together.

To select a color light show mode or fixed color mode, rotate the dial so that it points to the desired selection.

Hold and Recall Feature: When IntelliBrite color lights are powered on, the previously selected color will be displayed, unless the HOLD or RECALL feature was previously enabled.

Hold button/LED: Press this button (LED on) to capture and save a color effect while displaying one of the light show modes. When the button is pressed, the LED will be on, indicating that the color effect is captured.

Recall Button/LED: Use this button (LED on) to activate the last saved color effect. When the button is pressed, the LED will be on, indicating that the color effect is being displayed.

Replacing the IntelliBrite® 5G Pool and Spa Light Fixture (in an existing pool or spa)



Risk of Electrical Shock or Electrocution!

This underwater light must be installed by a licensed or certified electrician or a qualified pool professional in accordance with the National Electrical Code and all applicable local codes and ordinances. 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, and may also cause damage to property. Always disconnect the power to the pool light at the circuit breaker before servicing the light. Failure to do so could result in death or serious injury to service person, pool users or others due to electrical shock.

Verify that the pool and spa meets the requirements of the current National Electrical Code and all local codes and ordinances. A licensed or certified electrician must install the electrical system to meet or exceed those requirements before the underwater light is installed. Some of the requirements of the National Electrical Code which the pool's electrical system must meet are as follows:

- 120 VAC pool/spa lights must have a Ground Fault Circuit Interrupter (GFCI), with an appropriately rated circuit breaker. 12 VAC pool/spa/lights do not require a GFCI. See Figure 1, page 7 for details.
- **The Junction Box:** For 12 volt models only, the low voltage step-down transformer shall be located at least 8 in (20.3 cm) above the maximum water line and at least 4 in (10.2 cm) above the ground level or pool deck whichever provides the greater elevation. The junction box shall be no less than 4 ft (1.22 m) from the inside wall of the pool, unless separated from the pool by a solid fence, wall or other permanent barrier. See Figure 3 on page 9.
- Bond the niche-fixture housing to all other metallic items within 5 ft (1.53 m) of the pool, using a No. 8 AWG bond wire. The Bond connection is located at the rear of the niche, see Figure 3 on page 9.
- The wet niche is properly installed so the top edge of the underwater light's lens is at least 18 inches (45.7 cm) below the surface of the water in the pool, see Figure 3 on page 9. Also, the face ring PILOT SCREW must be at the 12 o'clock position.
- If non-metallic conduit is used, a No. 8 AWG bonding/grounding wire must be installed through the conduit from the Junction Box to the bonding/grounding lug inside the niche. Seal the wire/lug connection with a listed sealant to protect the connection from possible pool water corrosion. See Figure 3 on page 9.
- To be certain that the pool's electrical system meets all applicable requirements, the electrician should also consult the local building department. Note: Use only Pentair wet niches to insure proper bonding and grounding connections.

Replacing the IntelliBrite® 5G Pool and Spa Light Fixture (After Electrical Requirements Are Met)

The following removal and installation instructions describe how to remove and install the IntelliBrite pool and spa light assembly. Also use these instructions after completing the following light replacement procedure:

Note: For IntelliBrite Spa Light, Face Ring, Uni-Tension Wire Clamp, Gasket and Lens Removal and Installation instructions, see page 21.

WARNING

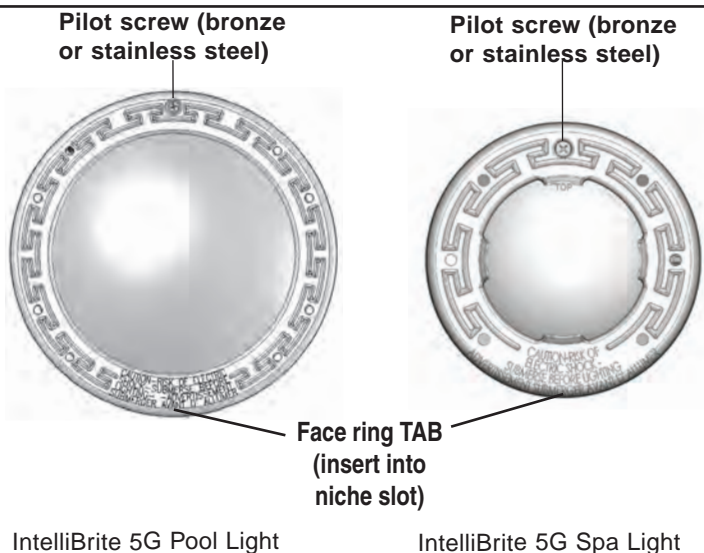
Failure to bring the pool or spa's electrical system up to code requirements before installing the underwater light will create an electrical hazard which could result in death or serious injury to pool users, installers, or others due to electrical shock, and may also cause damage to property.

1. **Switch off main electrical switch or circuit breaker, and the switch which operates the IntelliBrite underwater light.**
 - **Do not service the light while in the pool water. Service the light on the deck.**
2. **To remove light fixture assembly from the pool.** Remove the special bronze (or stainless steel) pilot screw at top of face ring. **Remove the IntelliBrite light assembly from the niche and place it on the deck.**
3. Cut the cord about 12 in (30.5 cm) from the back of the light assembly.
4. Remove Junction Box cover, disconnect the light fixture wires, and pull the cord through the conduit. ***Tip: Before pulling the cord, tape the new cord to the existing cord, This might make it easier to feed the new cord through the conduit (see the following step).***
5. Feed the new light fixture cord through the conduit from the niche to the Junction Box. **Note:** Depending on the length of the conduit, special tools may be required to pull the cord through the conduit.
6. Leave at least 4 ft (1.2 m) of cord to coil around the light fixture; see Figure 3 on page 9. This allows the light to be serviced on the deck after the pool is filled with water.
7. Cut the cord at the Junction Box, leaving at least 6 in (1.27 cm) of cord to make the connections.
8. Strip 6 in (15.2 cm) of the outer cord jacket from the cord to expose the three insulated conductors. Be careful not to damage the insulation on the three inner conductors. Strip a 1/2 in (1.27 cm) of insulation off the three conductors. Be careful not to damage the copper conductor.

9. Connect the three light wires to the corresponding light circuit wires in the Junction Box. Connect the black wire to power, white wire to common, and the green wire to ground.
10. Secure the Junction Box cover.
11. Install the IntelliBrite® light assembly into the pool niche. Be sure to insert the TAB on the lower part of the face ring into the niche SLOT (located on the lower part of the niche). This is important to secure the lower part of the light assembly onto the niche before tightening the pilot screw.
12. Carefully tighten the special bronze (or stainless steel) pilot screw to secure the upper part of the light assembly onto the niche.

⚠ WARNING

Use only the **special pilot screw provided** with this underwater light. This screw mounts and electrically grounds the housing securely to the mounting ring and wet niche. Failure to use the screw provided could create an electrical hazard which could result in death or serious injury to pool users, installers or others due to electrical shock.



13. **Final check for proper IntelliBrite light operation:** Switch on the main switch or circuit breaker to the system, and the switch that operates the IntelliBrite underwater light itself. The light should illuminate when power is applied. If not recheck the installation steps starting with Step 1 (page 4).

INTELLIBRITE® 5G POOL AND SPA LIGHT FIXTURE INSTALLATION (NEW POOL CONSTRUCTION - USA)

The following describes how to install the IntelliBrite® Pool Light fixture and the IntelliBrite Spa Light fixture. Read page 4 before starting the installation procedure.

BEFORE STARTING: The following steps 1-13 (page 4-5) describe the tasks that must be completed by the electrician before the IntelliBrite light fixture is installed. See Figure 1 diagram on page 7.

WARNING

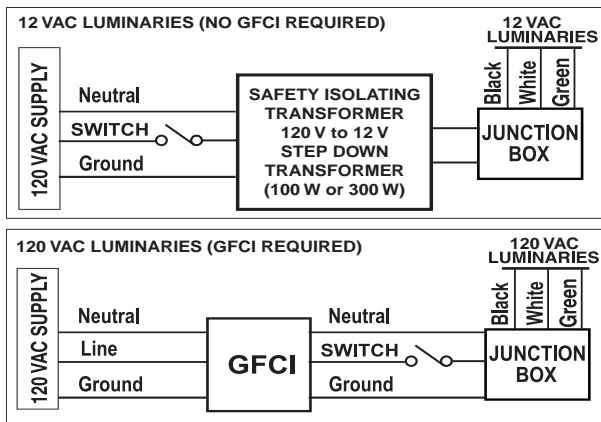
Be sure that the pool or spa meets the requirements of the current National Electrical Code (N.E.C.) Article 680 and all local codes and ordinances. A licensed or certified electrician must install the electrical system to meet or exceed those requirements before the underwater light is installed. Some of the requirements of the National Electrical Code which the pool's electrical system must meet are as follows:

- 120 VAC pool/spa lights **must be connected to** a Ground Fault Circuit Interrupter (GFCI), with an appropriately rated circuit breaker. See Figure 1, page 7 for details.
- The Junction Box (or, for 12 volt models, the low voltage transformer) shall be located at least 8 in (20.3 cm) above the maximum water line and at least four 4 in (10.2 cm) above the ground level or pool deck whichever provides the greater elevation. The junction box shall be no less than 4 ft (1.22 m) from the inside wall of the pool, unless separated from the pool by a solid fence, wall or other permanent barrier. See Figure 3 on page 9.
- Bond the niche-fixture housing to all other metallic items within 5 ft (1.53 m) of the pool, using a No. 8 AWG bond wire. The Bond connection is located at the rear of the niche, see Figure 3 on page 9.
- The wet niche is properly installed so the top edge of the underwater light's lens is at least 18 in (45.7 cm) below the surface of the water in the pool, see Figure 3 on page 9. Also, the face ring PILOT SCREW must be at the 12 o'clock position.
- If non-metallic conduit is used, a No. 8 AWG bonding/grounding wire must be installed through the conduit from the Junction Box to the bonding/grounding lug inside the niche. Seal the wire/lug connection with a listed sealant to protect the connection from possible pool water corrosion. See Figure 3 on page 9.

Note: To be certain that the pool or spa electrical system meets all applicable requirements, the electrician should also consult the local building department.

Note: Use only Pentair wet niches to insure proper bonding and grounding connections.

GFCI 12 VAC LIGHT INSTALLATION REQUIREMENTS (USA)



FOR LIGHT OPERATION, ONLY USE A SAFETY ISOLATION TRANSFORMER.

Note: Connect three wires to the corresponding circuit wires in the Junction Box. Connect: Black wire to power, white wire to common, and green wire to ground. **IMPORTANT!** 120 VAC POOL/SPA LIGHTS **MUST HAVE A GFCI CONNECTION.**

Figure 1, USA

INTELLIBRITE® 5G POOL AND SPA LIGHT FIXTURE INSTALLATION (NEW POOL CONSTRUCTION - CANADA)

Be sure the electrical system of your pool conforms with the following requirements of the Canadian Electrical Code (CE), and all local codes and ordinances. A licensed or certified electrician must install the electrical system to meet or exceed those requirements before the light and (fixture-housing) is installed. Some of the CE requirements are listed below.

- 120 VAC and 12 VAC lights **must have** a Ground Fault Circuit Interrupter (GFCI), and have an appropriately rated circuit breaker. Figure 2 on page 8.
- The GFCI or a transformer must be located at least 3 m (10 ft) or more from the edge of the pool, see *NOTE and Figure 2 on page 8.
- The junction/deck box must be sealed to the conduit to prevent water from getting into the box, see Figure 2 on page 8.
- The light fixture and all metal items within 3 m (10 ft) of the pool must be properly electrically bonded.
- The niche must be properly installed so the pilot screw hole is at the 12 o'clock position and that the center line of the Underwater Light's lens is at a maximum depth of 600 mm below the surface of the water in the pool, see Figure 4 on page 9.
- Be sure the niche is properly electrically bonded via the No. 6 AWG ground connector located at the rear of the niche.
- Use only Pentair lighting fixtures in this niche to ensure proper bonding and grounding connections.
- If non-metallic conduit is used, a No. 8 AWG bonding/grounding wire must be installed through the conduit from the Junction Box to the bonding/grounding lug inside the niche. Seal the wire/lug connection with a listed sealant to protect the connection from possible pool water corrosion. See Figure 4 on page 9.

JUNCTION BOX/GFCI INSTALLATION REQUIREMENTS (CANADA)

The following information is for the Junction Box and pool deck location for Canada only. Junction/Deck boxes shall be installed:

- (a) above the normal water level of the pool;
 - (b) so that the top of the box is located at or above the finished level of the pool deck;
 - (c) in such a manner or location that the box will not be an obstacle; and
 - (d) in such a manner that any water on the deck will drain away from the box
- (See diagram below).

FOR LIGHT OPERATION, ONLY USE A SAFETY ISOLATION TRANSFORMER.

Note: Connect three wires to the corresponding circuit wires in the Junction Box.

Connect: Black wire to power, white wire to common, and green wire to ground.

IMPORTANT! 120 VAC AND 12 VAC POOL/SPA LIGHTS MUST HAVE A GFCI CONNECTION. SEE FIGURE 2 BELOW.

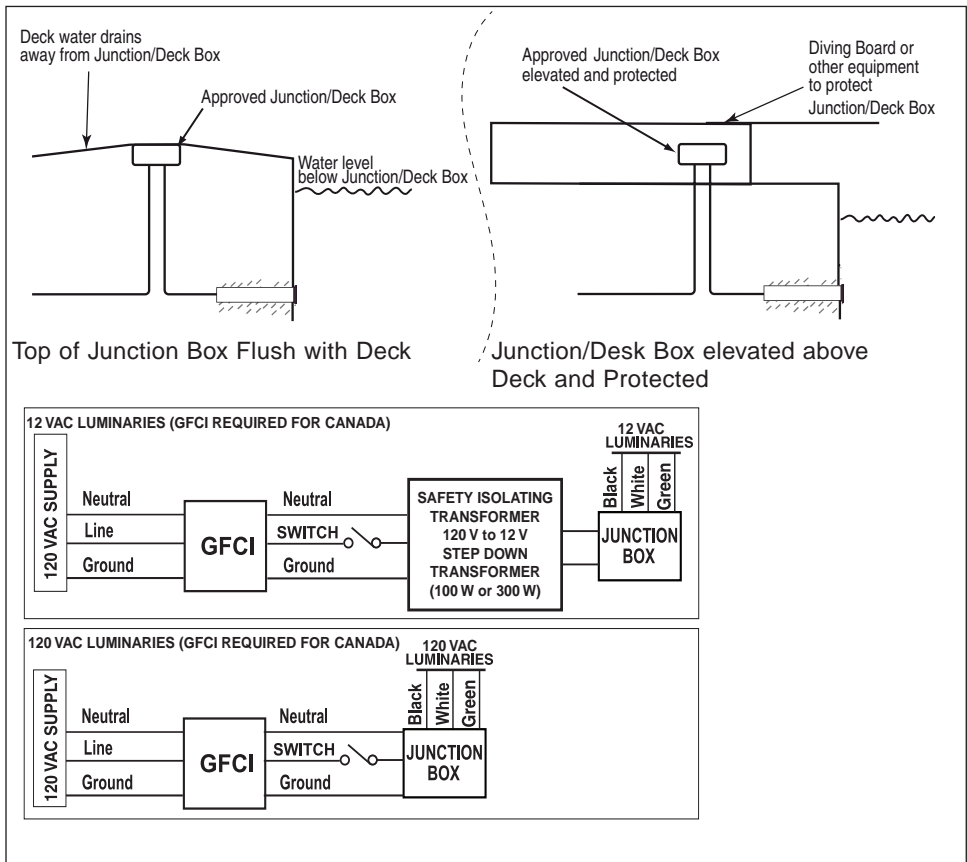


Figure 2, Canada.

INSTALLING THE INTELLIBRITE® 5G POOL AND SPA LIGHT FIXTURE (AFTER ELECTRICAL REQUIREMENTS ARE MET)

To install the IntelliBrite® Pool Light and Spa Light fixture:

1. **Switch off main electrical switch or circuit breaker, and the switch which operates the IntelliBrite underwater light.**

Route light cable through conduit to Junction Box, leaving at least 4 ft (1.22 m) of cable at the light fixture to coil around the light (this allows the light to be serviced on the deck after the pool is filled with water). See Figure 3 (USA), and Figure 4, (Canada) below.

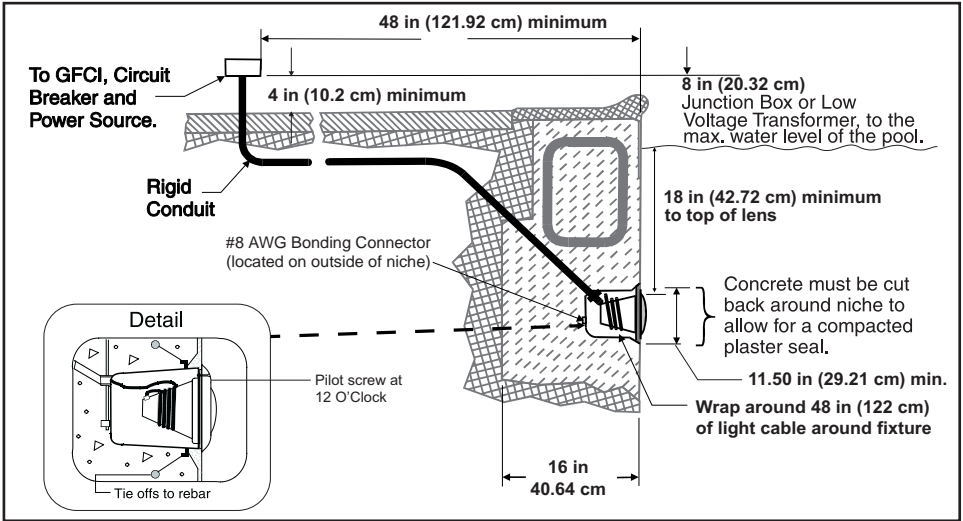


Figure 3, USA.

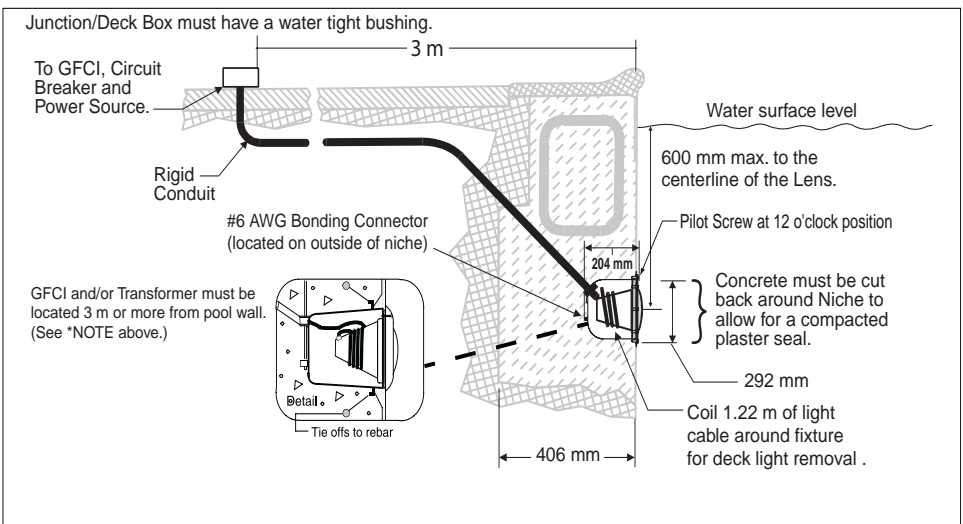


Figure 4, Canada.

INSTALLING THE INTELLIBRITE® 5G POOL AND SPA LIGHT FIXTURE (AFTER ELECTRICAL REQUIREMENTS ARE MET)

2. Cut the cable at the Junction Box, leaving at least 6 in (15.3 cm) of cord to make connections.
3. Strip back 6 in (15.3 cm) of the outer cord jacket to expose the three insulated conductors (be careful not to damage the insulation on the three inner conductors). Strip a 1/2 in (1.27 cm) of insulation off the three conductors. Be careful not to damage the copper conductor.
4. Connect all three conductors to the corresponding circuit wires in the Junction Box and secure the Junction Box cover in place.
5. Install the IntelliBrite® Light assembly into the niche and tighten the special bronze (or stainless steel) pilot screw.

⚠ WARNING

Use only the **special pilot screw provided** with this underwater light. This screw mounts and electrically grounds the housing securely to the mounting ring and wet niche. Failure to use the screw provided could create an electrical hazard which could result in death or serious injury to pool users, installers or others due to electrical shock.

**Pilot screw (bronze
or stainless steel)**



IntelliBrite 5G Pool Light

**Pilot screw (bronze
or stainless steel)**



IntelliBrite 5G Spa Light

6. Fill the pool until the underwater light is completely submerged in water before operating the light.
7. **Final check for proper light operation:** To check for proper operation, switch on the main switch or circuit breaker, and the switch that operates the IntelliBrite underwater light itself. The light should illuminate when power is applied. If not recheck the installation steps starting with Step 1 on page 4.

IntelliBrite® 5G Pool Light (12V) Fuse Harness Replacement Overview

The following describes how to replace the IntelliBrite 5G Pool Light fuse assembly (if applicable) and the light main circuit board for the IntelliBrite 5G pool light.

IMPORTANT! Before replacing the fuse assembly note the following:

Troubleshooting

Problem	Cause/Action
Light does not function properly	Check the light wiring connection to the junction box at the pool side and to the AC power switch. Be sure that there is proper AC power applied to the light.
The light will not illuminate.	Check the GFCI ground fault wiring and reset if necessary. For 120 V lights only.

IntelliBrite 5G 12 V Light with Light Fuse Assembly

Replace FUSE assembly (see page 14):

Note: Replacing the fuse assembly may or may not resolve this problem. In some instances the fuse assembly will blow, and after replacing the fuse the light's circuit board is still not functional. In this case, the circuit board must be replaced.

REPLACING THE INTELLIBRITE POOL LIGHT CIRCUIT BOARD ASSEMBLY (IN AN EXISTING POOL)

When replacing the IntelliBrite Pool Circuit Board, the Unit-Tension Wire Clamp (P/N 600095), (Gasket (P/N 620400Z) or Gasket and Lens (619864Z) MUST ALSO BE REPLACED - SEE PAGE 20 FOR PART NUMBERS.

Removal and Installation of IntelliBrite 5G Light Circuit Board

⚠ DANGER



D A N G E R !

RISK OF ELECTRICAL SHOCK OR ELECTROCUTION

Always disconnect power to the pool light at the circuit breaker before servicing the light. Failure to do so could result in death or serious injury to installer, service person, pool users, or others due to electrical shock.

1. **Turn off main electrical switch or circuit breaker**, as well as the switch which operates the IntelliBrite light itself. **Note: DO NOT service the light while in the pool water. Service the light on the deck.**
2. Before starting be sure that you have a new lens gasket (P/N 620400Z), Uni-Tension Wire Clamp (P/N 600095) and a IntelliBrite 5G pool light circuit board assembly (P/N 619875Z - 300w, P/N 619916Z-400W, P/N 619917Z-500w) - P/N 619818Z (Color) ready to install.

⚠ WARNING

Replace the light circuit board assembly with the same type and wattage. Failure to replace the light circuit board assembly with the same type will damage the light assembly and may cause an electrical hazard resulting in death or serious injury to pool users, installers, or others due to electrical shock, and may also cause damage to property.

⚠ WARNING

Always install a new lens gasket (P/N 620400Z) and Uni-Tension Wire Clamp (P/N 600095) whenever disassembling the IntelliBrite light assembly. Failure to do so may permit water to leak into the assembly which could cause:

- (a) an electrical hazard resulting in death or serious injury to pool users, installers, or others due to electrical shock, or
- (b) breakage of the lens, which likewise could result in serious injury to pool users, installers, or bystanders, or in damage to property.

3. **REMOVING THE INTELLIBRITE 5G POOL LIGHT ASSEMBLY:** Remove the pilot screw at top of face ring, remove the light assembly from the niche. Place the assembly on the deck. **Note:** It is not necessary to drain down the pool.
4. Unwind the cord from the base of the light housing.

Pilot screw (bronze or stainless steel)



IntelliBrite 5G Pool Light

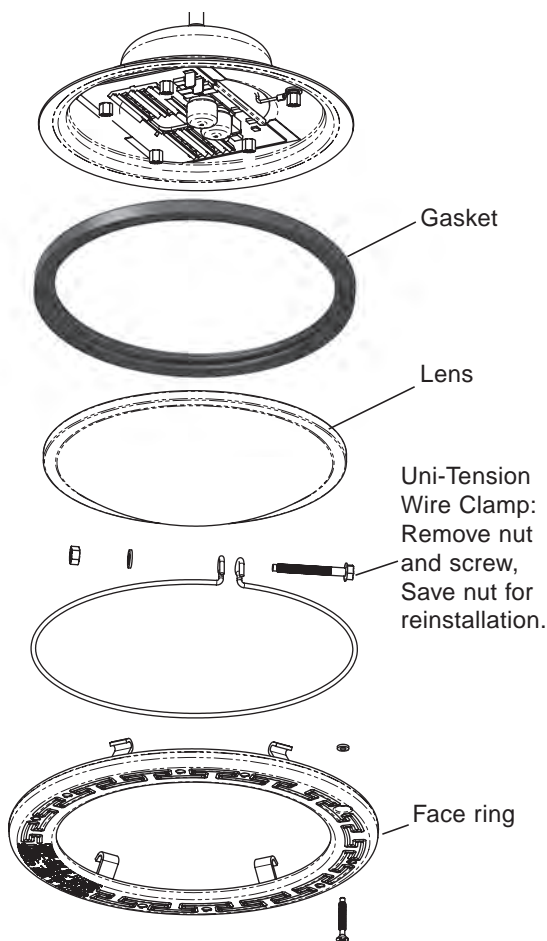
REPLACING THE INTELLIBRITE® POOL LIGHT CIRCUIT BOARD ASSEMBLY (IN AN EXISTING POOL) (Continued)

5. Place a cloth on the ground to protect the lens. Turn the light over so the lens is resting on the cloth. Using a 1/4 in (0.64 cm) nut driver and a #3 Phillips screwdriver, remove the nut from the Uni-Tension Wire Clamp. **Place the nut aside for reinstallation.**

6. Remove the face ring and wire clamp from the light housing. **Discard the Uni-Tension Wire Clamp.**

7. With the light resting on its base, carefully pry off the gasket to remove the lens. Set the lens aside for installation later. **Discard the gasket.**

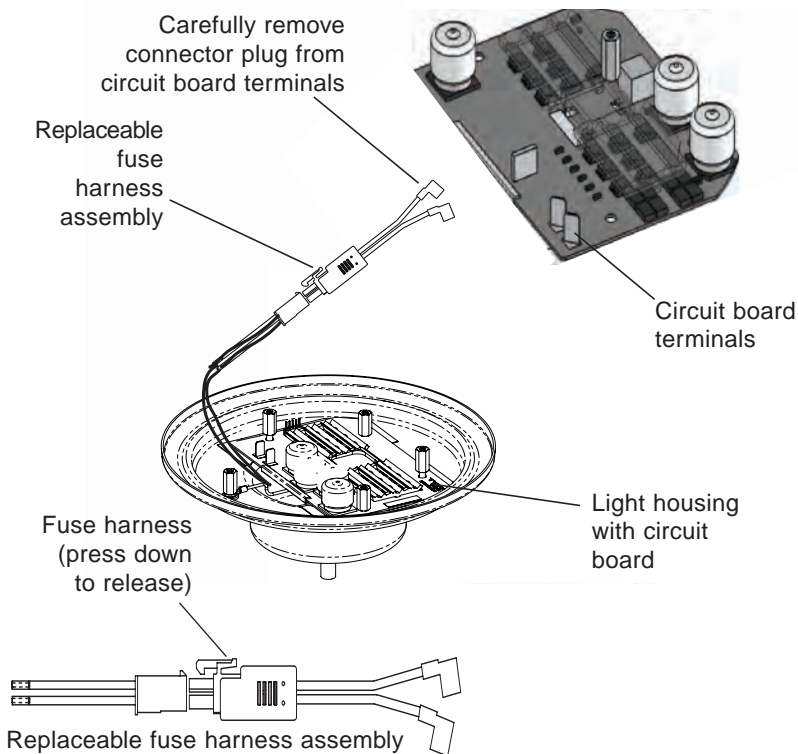
Note: A NEW LENS GASKET (P/N 620400Z) AND UNI-TENSION WIRE CLAMP MUST BE USED EACH TIME THE LIGHT IS REASSEMBLED. See page 20 for Replacement Kit part numbers.



Note: Note the current position of the lens at the pilot screw (12 o'clock) position, before removing it from the fixture. "W" on the lens indicates wide angle, "N" indicates narrow angle. For more information, see page 17 and 19.

NOTE: For a pool light (12 V only, no internal step-down transformer) that has a replacement FUSE ASSEMBLY, continue the procedure on the next page. If the light does NOT have a replaceable fuse assembly, proceed to page 15.

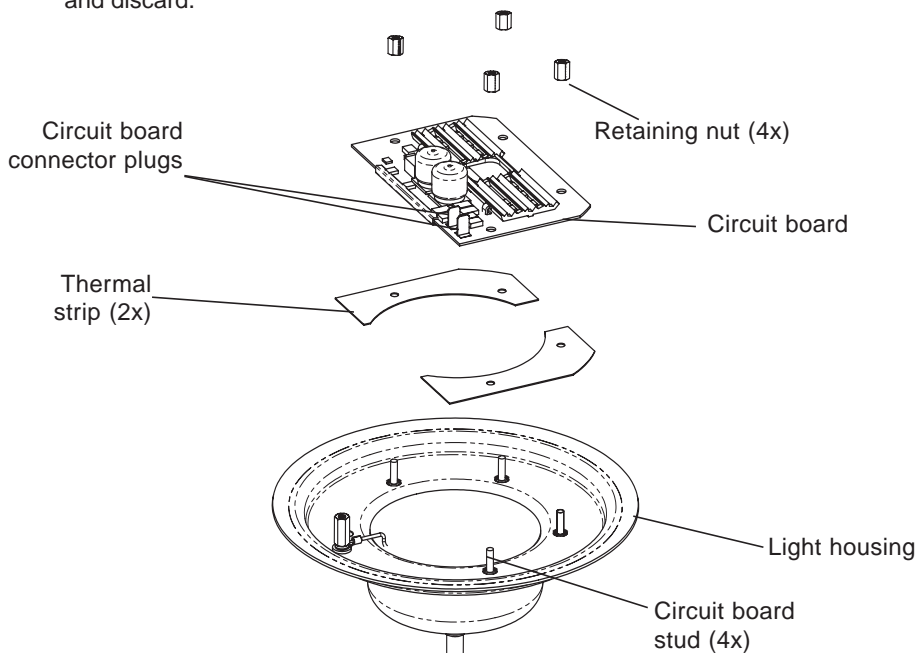
REPLACING THE FUSE HARNESS ASSEMBLY (FOR 12 V LIGHTS ONLY)



1. Using your fingers, carefully disconnect each fuse connector plug from the circuit board terminals. Carefully lift each connector plug upward, with small side-to-side movements while holding the circuit board terminals with a flat screw driver. Then gradually disconnect the connector plug from the terminal. *Note: To avoid permanent damage to the circuit board, be sure not to pull the terminals off the surface of the circuit board.*
2. Once the fuse connector plugs are removed from the circuit board terminals, separate the fuse assembly from the light wire harness by pressing down on the fuse release lever, then gently pull apart.
3. Insert the new fuse harness connector into the light cable harness plug and snap together.
4. Using your fingers to carefully connect each fuse connector plug onto the circuit board terminals. *Be sure not to press down too hard on the connector, this can damage the terminal connections on the circuit board.*
5. **Continue with "INSTALLING THE INTELLIBRITE® 5G POOL LIGHT ASSEMBLY WITH NEW GASKET AND UNI-TENSION WIRE CLAMP" on page 15.**

REMOVING THE LIGHT CIRCUIT BOARD ASSEMBLY

1. Using a 1/4 in (0.64 cm) nut driver, carefully remove the four retainer nuts from the light assembly (see illustration on next page). Place the nuts aside for reinstallation.
2. Unplug the two connector plugs from the circuit board. Lift up the circuit board and remove it from the light housing base.
3. Carefully lift off the old thermal strips from the base of the light housing base and discard.



4. Place the two new thermal strips (provided) over the circuit board studs in the base of the light housing.
5. Place the light circuit board over the base studs and seat the circuit board on top of the thermal strips. Be sure the two connecting wires are not caught between the housing and the edge of the circuit board.
6. Using a 1/4 in (0.64 cm) nut driver, tighten each of the four retaining nuts to a torque value of 6.0 (minimum) to 8.0 (maximum) in-lbs to secure the circuit board.
DO NOT OVERTIGHTEN THE CIRCUIT BOARD NUTS.

INSTALLING THE INTELLIBRITE® POOL LIGHT ASSEMBLY WITH NEW GASKET AND UNI-TENSION WIRE CLAMP (See step 1 on next page)



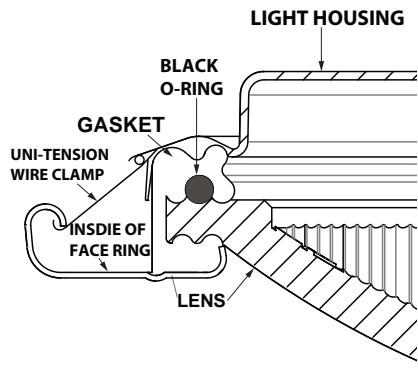
WARNING Be sure to install ALL of the four retaining nuts. These nuts ensure proper electrical ground. Failure to install all of the retaining nuts could create an electrical hazard which could result in death or serious injury to pool users, installers or others due to electrical shock.

Continue on next page.

INSTALLING THE INTELLIBRITE® POOL LIGHT ASSEMBLY WITH NEW GASKET AND UNI-TENSION WIRE CLAMP (Continued)

1. **Install NEW GASKET ONTO LENS:** Stretch the gasket around the circumference of the lens. Be sure the gasket is installed evenly around the lens.

IMPORTANT NOTE: Install the gasket so that the flat edge side of the gasket is towards the inner surface of the face ring and the Black embedded o-ring must be between the lens and the light housing.
Note: The letters TOP are embossed on the flat edge side of the gasket.



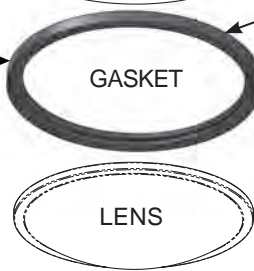
2. **ALIGN THE LENS/GASKET ON TO THE LIGHT HOUSING:**

a) With the light housing resting on its base, place the lens/gasket on top of the light housing.

b) Rotate the lens/gasket to align the letter "W" ("WIDE" angle) on the lens with the brass nut in the housing (see diagram on page 17 for brass nut location).

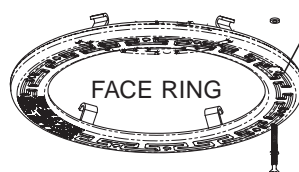


Gasket (Flat edge towards the face ring - TOP is embossed on the top side of the gasket)



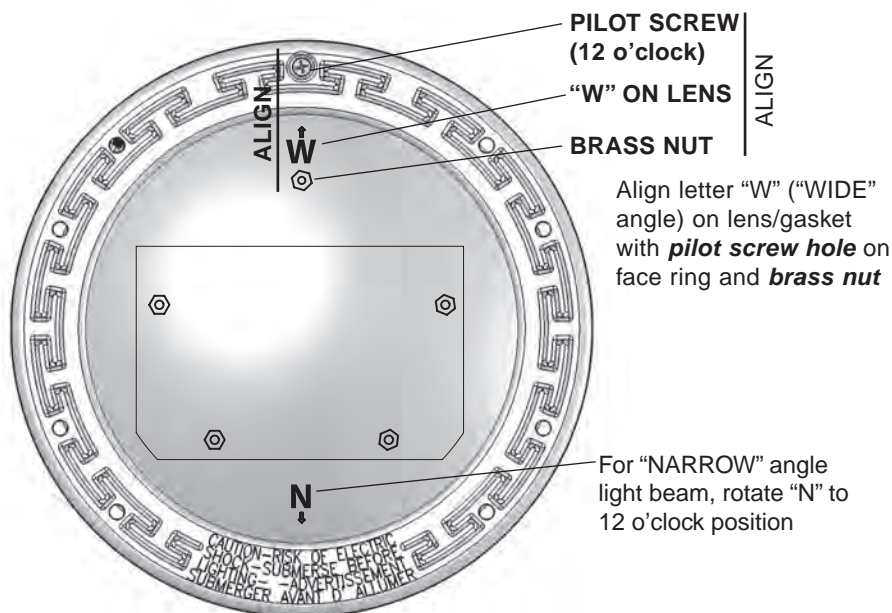
3. **INSTALL THE FACE RING:**

Place the face ring on top of the lens/gasket/housing. Rotate the face ring so the **pilot screw hole** is aligned in the 12 o'clock position, with the lens letter "W" (or "N") and the brass nut in the housing. Also, verify the "TOP" position arrow indicator label (see page 17) on the rear of the housing is aligned with the pilot screw on the face ring.

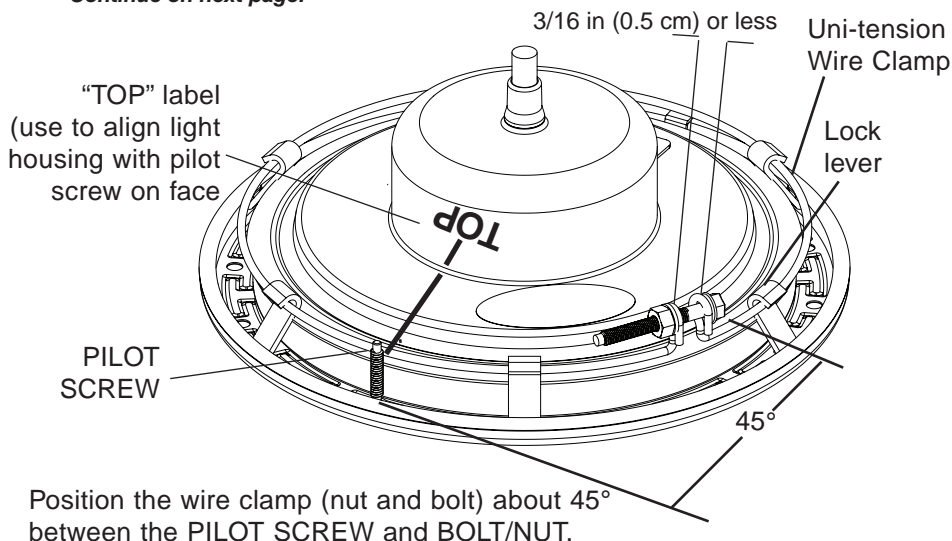


Gasket flat edge is towards the inner surface of face ring

Note: The IntelliBrite light lens ships from the factory in the 'WIDE' (W) angle position. The "wide" position of the lens is typically used for lights located either side of the pool. The "narrow" position of the lens is typically used for lights located either end of the pool. To use the "NARROW" angle light beam, rotate the lens/gasket to align the letter "N" on lens. Note: For more information about the "WIDE" and NARROW angle lens position, see page 19.



- 4. INSTALL UNI-TENSION WIRE CLAMP:** With the hook ends of the circular Uni-Tension Wire Clamp pointing down, spread the clamp and place it in the "U" recesses of the locking levers. Be sure the hook ends of the clamp are located between the pair of locking levers as shown below and that the wire clamp is properly engaged with all of the lock levers.
 - 5.** Place a cloth on the ground to protect the lens. Turn the light over so the lens is resting on the cloth. Be sure the orientation of the wire clamp and the bolt connection is positioned at 45°.
 - 6.** Tighten the bolt and nut until both ends meet (touching is optimal). Note: A tolerance distance of 3/16" (4.8 mm) or less between the ends of the clamp.
- Continue on next page.**



7. Coil at least 4 ft (1.22 m) of cord around the light fixture (see page 9). This allows the light to be serviced after the pool is filled with water.
8. Connect the three light wires to the corresponding light circuit wires in the Junction Box. Connect the black wire to power, white wire to common, and the green wire to ground. Secure the Junction Box cover.
9. Install the light assembly into the pool niche. **IMPORTANT: Be sure to insert the TAB on the lower part of the face ring into the niche SLOT (located on the lower part of the niche). This is important to secure the lower part of the light assembly onto the niche before tightening the pilot screw.**
10. Carefully tighten the special bronze (or stainless steel) pilot screw to secure the upper part of the light assembly onto the niche.

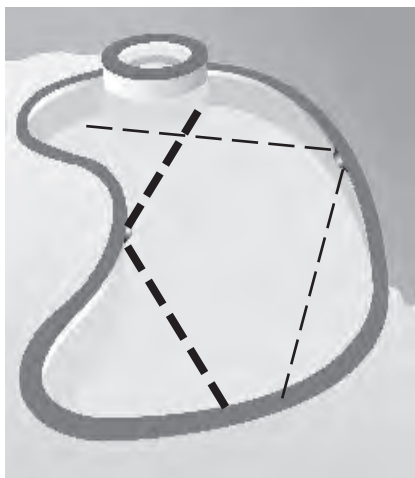


IntelliBrite Pool Light

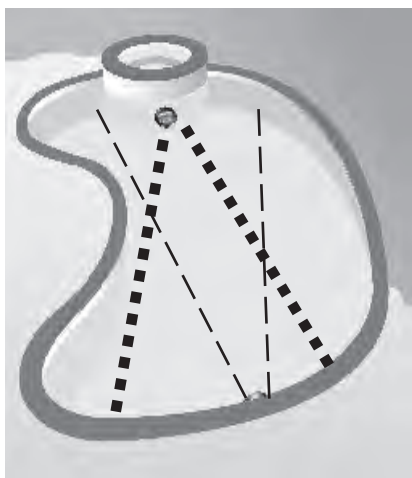
11. **Final check for proper IntelliBrite® Light operation:** Switch on the main switch or circuit breaker to the system and the switch that operates the IntelliBrite light itself. The light should illuminate when power is applied. If not recheck the installation steps starting with Step 1 (page 4).

Wide and Narrow Angle Lens Adjustment

The IntelliBrite® 5G Light lens geometry provides a choice of “wide” or “narrow” angle light beam to suit various size pools. For lights located on either side of the pool, rotate the lens to the ‘wide’ (W) angle position, which will provide a wider angle light beam for greater underwater coverage and light reflection the width of the pool. For lights located either end of the pool, rotate the lens to the ‘narrow’ (N) angle light beam position for increased underwater light intensity and distance. Note: The IntelliBrite light lens ships from the factory in the ‘WIDE’ (W) angle position.



**WIDE ANGLE LIGHT BEAM
(FOR SIDES OF POOL)**



**NARROW ANGLE LIGHT BEAM
(FOR ENDS OF POOL)**

IntelliBrite® 5G Pool Light Assembly Replacement Kit Part Numbers

Note: A 120 VAC to 12 VAC external transformer is required for the 12 VAC model IntelliBrite pool white light. See page 1 for more information.

IntelliBrite 5G Pool Light Assembly (UL/CAS listing)		
Product Model	Voltage	Cord Length (feet/mm)
601105	12 V	30 ft (9.2 m)
601106	12 V	50 ft (15.2 m)
601107	12 V	100 ft (30.5 m)
601108	12 V	150 ft (45.7 m)
601205	12 V	30 ft (9.2 m)
601206	12 V	50 ft (15.2 m)
601207	12 V	100 ft (30.5 m)
601208	12V	150 ft (45.7 m)
601300	120 V	30 ft (9.2 m)
601305	12 V	30 ft (9.2 m)
601306	12 V	50 ft (15.2 m)
601307	12 V	100 ft (30.5 m)
601308	12 V	150 ft 45.7 m)

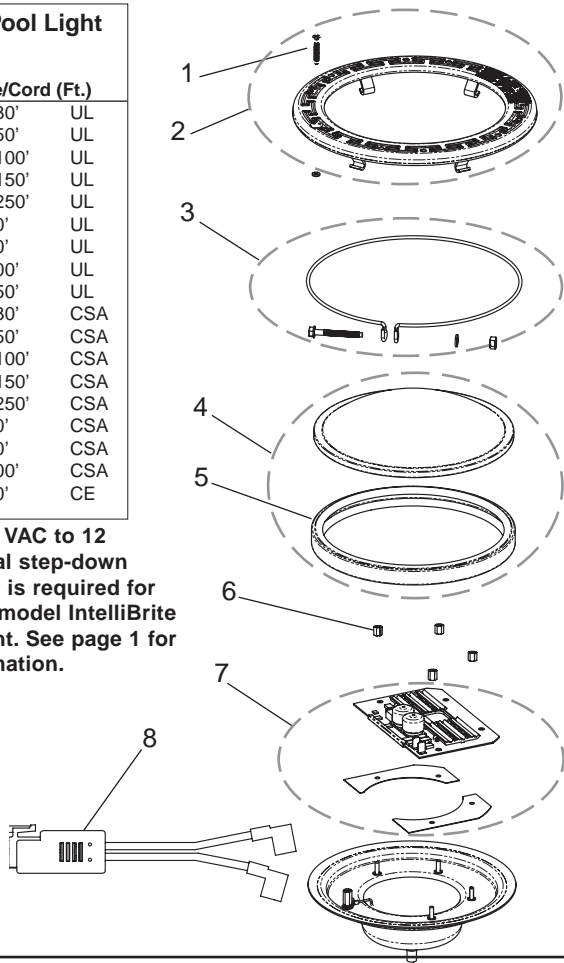
IntelliBrite® Pool Light Assembly Replacement Kit Part Numbers

5G White Pool Light (UL/CSA)	5G Color Pool Light (UL/CSA)
Model/Voltage/Cord (Ft.)	Model/Voltage/Cord (Ft.)
601100/120V/30'	601000/120V/30' UL
601101/120V/50'	601001/120V/50' UL
601102/120V/100'	601002/120V/100' UL
601103/120V/150'	601003/120V/150' UL
601104/120V/250'	601004/120V/250' UL
601105/12V/30'	601010/12V/30' UL
601106/12V/50'	601011/12V/50' UL
601107/12V/100'	601012/12V/100' UL
601108/12V/150'	601013/12V/150' UL
601200/120V/30'	602000/120V/30' CSA
601201/120V/50'	602001/120V/50' CSA
601202/120V/100'	602002/120V/100' CSA
601203/120V/150'	602003/120V/150' CSA
601204/120V/250'	602004/120V/250' CSA
601205/12V/30'	602010/12V/30' CSA
601206/12V/50'	602011/12V/50' CSA
601207/12V/100'	602012/12V/100' CSA
601208/12V/150'	602020/12V/10' CE
601300/120V/30'	
601301/120V/50'	
601302/120V/100'	
601303/120V/150'	
601304/120V/250'	
601305/12V/30'	
601306/12V/50'	
601307/12V/100'	
601308/12V/150'	

Note: A 120 VAC to 12 VAC external step-down transformer is required for the 12 VAC model IntelliBrite 5G pool light. See page 1 for more information.

Note: Feet to metric conversion:

- 10 ft = (3.1 m)
- 30 ft = (9.2 m)
- 50 ft = (15.2 m)
- 100 ft = (30.5 m)
- 150 ft = (45.7 m)
- 250 ft = (76.2 m)



Item No.	Kit Part No.	Description
2, 3, 5	600095	Face Ring assembly, stainless steel. - Uni-tension wire clamp assembly. - Gasket, 8-3/8 in (20.9 cm) diameter, silicon.
4, 3	619864Z	Replacement Lens Kit. - Gasket, 8-3/8 in (20.9 cm) diameter, off white, - Uni-Tension Wire Clamp Assembly.
3, 5, 7	619875Z (UL) (300W), 619916 Z (400W), 619917Z (500W)	619818Z (color - standard) - 620366Z (RGB/Royal Blue) PCBA Kit Replacement kit includes: Circuit Board, Thermal Strips (2x). - Uni-tension wire clamp assembly. - Gasket, 8-3/8 in (20.9 cm) silicon diameter, off white.
1	79104800	Pilot screw (bronze), with captive gum washer
1	619355	Pilot Screw, Stainless Steel
5	620400Z	Gasket, 8-3/8 in (20.9 cm) diameter, silicone.
8	620276	Fuse Harness Kit (For 12 V lights only)

Note: The 120 VAC IntelliBrite pool light has an integrated 12 VAC transformer.

Replacing the IntelliBrite® Spa Light Gasket (in an existing pool)

Note: When replacing an IntelliBrite 5G Spa light assembly, a new spa light assembly includes a light engine, lens, gasket, uni-tension wire clamp, and face ring (for part numbers, see page 25).

⚠ DANGER



DANGER!

RISK OF ELECTRICAL SHOCK OR ELECTROCUTION

Always disconnect power to the pool light at the circuit breaker before servicing the light. Failure to do so could result in death or serious injury to installer, pool professional, pool users, or others due to electrical shock.

1. **Turn off main electrical switch or circuit breaker**, as well as the switch which operates the IntelliBrite underwater light itself.

Note: DO NOT service the light while in the pool water. Service the light on the deck.

⚠ WARNING

Always install a new lens gasket (P/N 79108600) and uni-tension wire clamp. Whenever disassembling the IntelliBrite light assembly. Failure to do so may permit water to leak into the assembly which could cause: **(a)** an electrical hazard resulting in death or serious injury to pool users, installers, or others due to electrical shock, or **(b)** breakage of the lens, which likewise could result in serious injury to pool users, installers, or bystanders, or in damage to property.

Pilot screw (bronze or stainless steel)



IntelliBrite 5G Spa Light

2. **REMOVING THE INTELLIBRITE SPA LIGHT:** Remove the pilot screw at top of face ring, remove the light assembly from the niche. **Place the assembly on the deck.** **Note:** It is not necessary to drain down the pool.

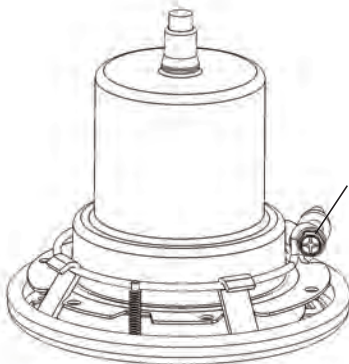
⚠ WARNING

Be sure to keep the pilot screw from the IntelliBrite light. This screw mounts and electrically grounds the housing securely to the mounting ring and wet niche. Failure to use the screw provided could create an electrical hazard which could result in death or serious injury to pool users, installers or others due to electrical shock.

3. Using a #3 Phillips head screwdriver, loosen the CLAMP SCREW and remove Uni-Tension Wire Clamp from the face ring.
4. Remove the face ring and Uni-Tension Wire Clamp from the light housing. Discard the Uni-Tension Wire Clamp. Save the face ring for reinstallation.

Note: A 120 VAC to 12 VAC external transformer is required for the 12 VAC model IntelliBrite® Spa Light. See page 1 for more information.

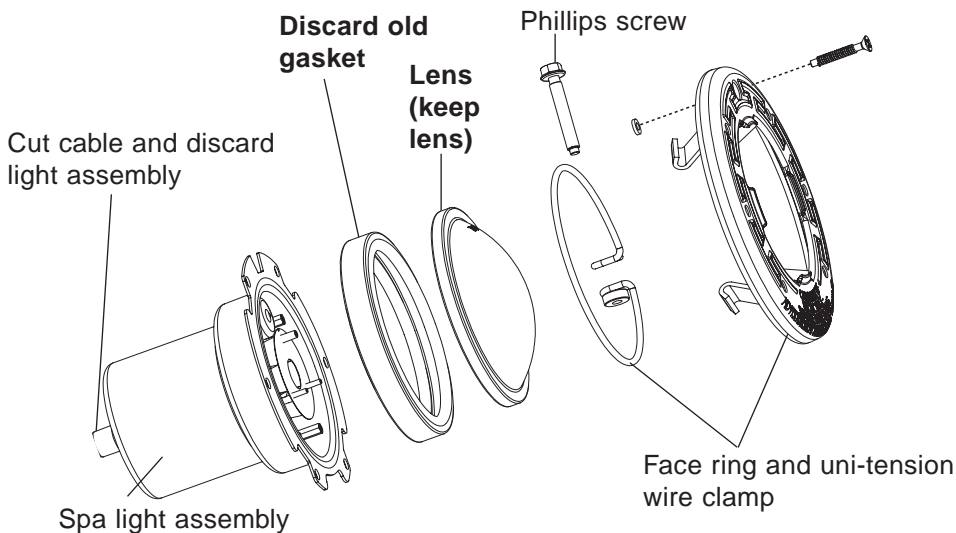
Note: The IntelliBrite Spa Light fixture is a sealed light assembly with no replaceable circuit board assembly. Only the lens, gasket and face ring can be removed from the sealed light assembly for replacement. See page 25 for replacement kit part numbers.



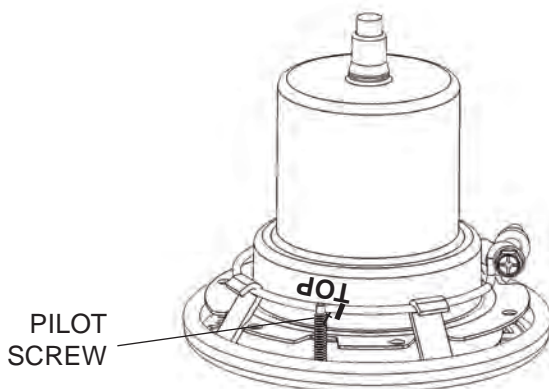
Loosen the Phillips screw to remove UNI-TENSION WIRE CLAMP from the face ring.

Spa light fixture with lens, gasket and face ring attached

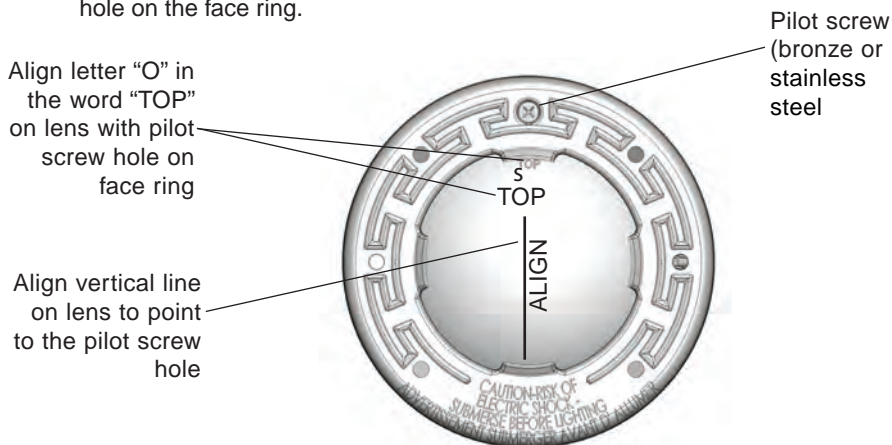
5. With the light assembly resting on its base on the deck, carefully pry off the gasket to release the lens. Discard the gasket. A NEW LENS GASKET AND UNI-TENSION WIRE CLAMP MUST BE INSTALLED EACH TIME THE SPA LIGHT IS REASSEMBLED.



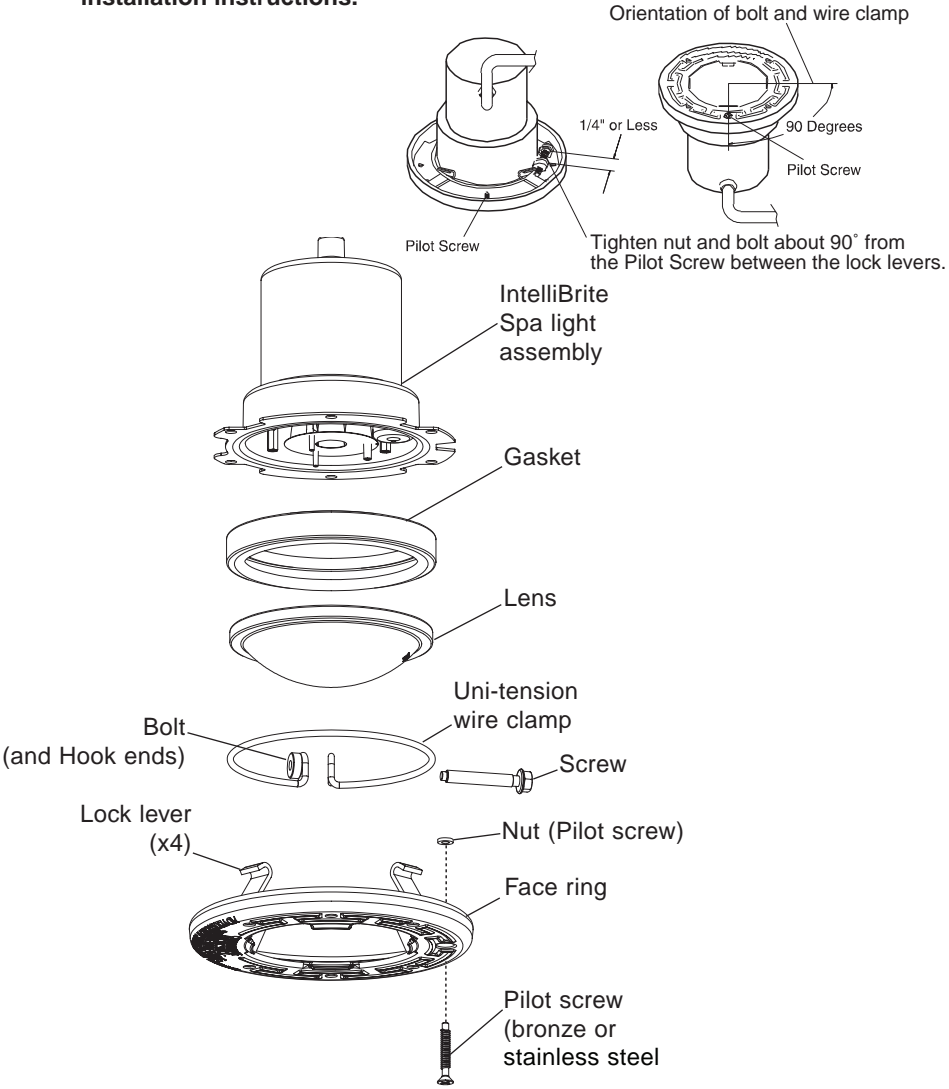
6. **INSTALLING THE INTELLIBRITE® SPA LIGHT WITH NEW GASKET AND UNI-TENSION WIRE CLAMP:** Install a new gasket and uni-tension wire clamp when assembling the IntelliBrite spa light assembly. A NEW LENS GASKET AND UNI-TENSION WIRE CLAMP MUST BE INSTALLED EACH TIME THE LIGHT IS REASSEMBLED.
7. **Install the new gasket onto the lens:** With the light housing resting on its base, place the lens then the gasket on top of the light housing.
8. **INSTALL FACE RING:** Place the face ring on top of the lens/gasket/housing. Rotate the light housing to align the "TOP" position arrow indicator label on the rear of the housing is aligned with the pilot screw on the face ring. Place the face ring on top of the gasket. Make sure that the lens and gasket are centered correctly on the light housing.



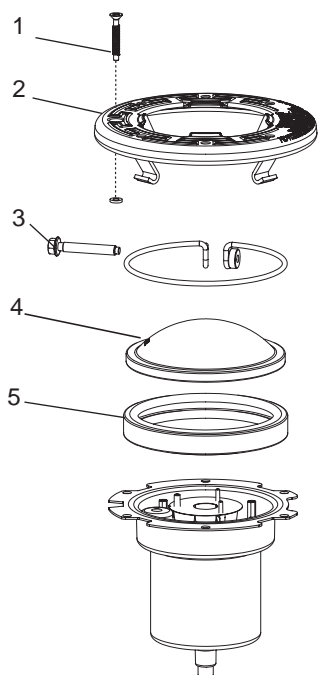
9. **Aligning the face ring and lens:** Align the face ring and vertical line on the lens so that the letter "O" in the word "TOP" and the small arrow above it) on the surface of the lens points to the 12 o'clock position and with pilot screw hole on the face ring.



11. **INSTALL THE NEW UNI-TENSION WIRE CLAMP:** With the hook ends of the circular uni-tension wire clamp pointing down, spread the clamp and place it in the “U” recesses of the locking levers. Be sure the hook ends of the clamp are located between the pair of locking levers as shown below and that the wire clamp is properly engaged with all of the lock levers.
12. Place a cloth on the deck to protect the lens. Turn the light over so the lens is resting on the cloth. Be sure the orientation of the wire clamp and the bolt connection is positioned at 90°. Tighten the bolt and nut until the distance between the ends of the clamp equals 1/4 in (0.64 cm) or less.
13. **PROCEED TO “Installing the IntelliBrite® 5G Pool and Spa Light Fixture (after electrical requirements are met)” on page 4 for spa light fixture installation instructions.**



IntelliBrite® 5G Spa Light Replacement Kit Numbers



IntelliBrite® 5G Color Spa Light Assembly (Listing UL/CSA)

Product Model	Voltage	Cord Length (feet/mm)
---------------	---------	-----------------------

640120	120 V	30 ft (9.2 m)
640121	120 V	50 ft (15.2 m)
640122	120 V	100 ft (30.5 m)
640123	120 V	150 ft (45.7 m)
640124	120V	250 ft (76.2 m)
640130	12 V	30 ft (9.2 m)
640131	12 V	50 ft (15.2 m)
640132	12 V	100 ft (30.5 m)
640133	12 V	150 ft (45.7 m)
*640125	120 V	150 ft (45.7 m)
*640135	12 V	150 ft (45.7 m)

Note: (*) RGB/Royal Blue

IntelliBrite® 5G White Spa Light Assembly (Listing UL/CSA)

Product Model	Voltage	Cord Length (feet/mm)
---------------	---------	-----------------------

640140	120 V	30 ft (9.2 m)
640141	120 V	50 ft (9.2 m)
640142	120 V	100 ft (9.2 m)
640143	120 V	150 ft (9.2 m)
640144	120 V	250 ft (9.2 m)
640150	12 V	30 ft (9.2 m)
640151	12V	50 ft (9.2 m)
640152	12 V	100 ft (9.2 m)
640153	12V	150 ft (9.2 m)

Item No.	Kit Part No.	Description
2,3,5	640045	Face ring assembly, stainless steel - Uni-tension wire clamp assembly - Gasket, 4 in (10.2 cm) diameter, off white
4,3,5	640046	Gasket, 4 in (10.2 cm) diameter, off white - Uni-Tension Wire Clamp Assembly - Lens, IntelliBrite, Spa, 4 in (10.2 cm) diameter, tempered
1	79104800	Pilot screw, with captive gum washer
1	619355	Pilot screw, stainless steel
5	79108600	Gasket, 4 in (10.2 cm) diameter, silicone

Note: A 120 VAC to 12 VAC external step-down transformer is required for the 12 VAC model IntelliBrite spa light. See page 1 for more information.

NOTES



PENTAIR WATER POOL AND SPA, INC.

1620, HAWKINS AVE., SANFORD, NC 27330 • + 1-919-566-8000

10951, WEST LOS ANGELES AVE., MOORPARK, CA 93021 • + 1-805-553-5000

WWW.PENTAIR.COM

Toutes les marques et tous les logos de Pentair sont la propriété de Pentair, Inc. Pentair Aquatic Systems®, IntelliBrite®, EasyTouch®, IntelliTouch® et SunTouch® sont des marques de commerce ou des marques déposées de Pentair Water Pool and Spa, Inc. ou de ses sociétés affiliées aux États-Unis ou dans d'autres pays. Sauf indication expressément contraire, les noms et les marques de tiers qui peuvent être utilisés dans le présent document ne sont pas utilisés pour indiquer une affiliation ou une approbation entre les propriétaires de ces marques et Pentair Water Pool and Spa, Inc. Ces noms et ces marques peuvent être des marques de commerce ou des marques déposées de ces tiers. Parce que nous améliorons constamment nos produits, Pentair se réserve le droit de changer ses caractéristiques sans avis préalable. Pentair offre l'égalité d'accès à l'emploi.

© 2019 Pentair Water Pool and Spa, Inc. Tous droits réservés. Ce document peut être modifié sans avis préalable.



N/P 620278 RÉV. C 2/2019