

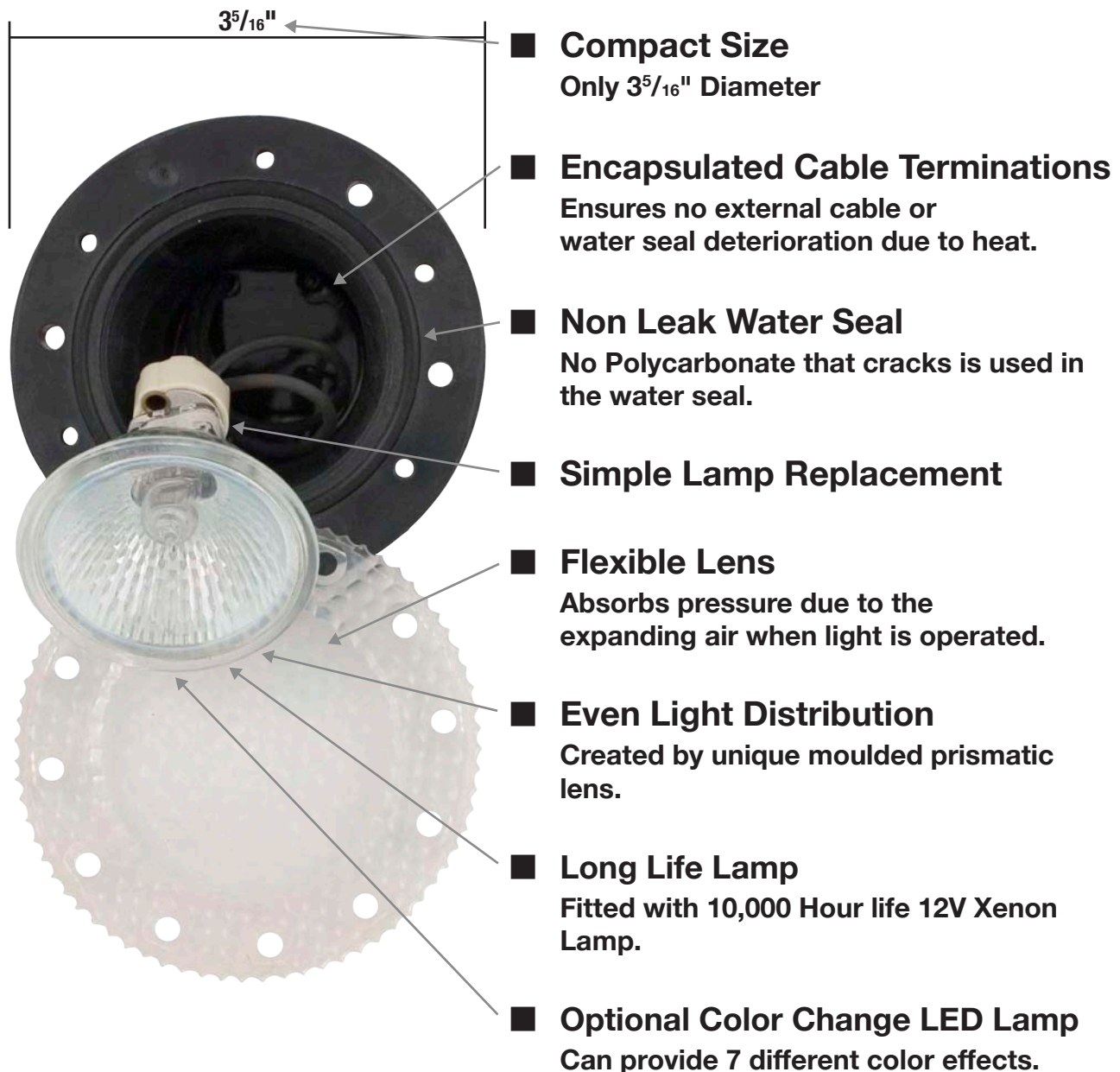
**PAL-2000  
LIGHTING  
SYSTEM**

# UNIQUE DESIGN FEATURES

**POWERITE  
PAL-2000**

The PAL-2000 provides a totally new concept in Underwater Pool/Spa and Aquatic Landscape Lighting Design.

Utilizing new technology moulding materials it has been possible to produce a compact light fitting with unique features that are not currently available from any other existing pool or spa lighting product.



U.S. Master Distributor  
**Horizon**<sup>TM</sup>  
Spa & Pool Parts, Inc.

OEM and Dealer Opportunities Available • 3120 E. Medina Rd. • Tucson, AZ 85706  
Ph. 866-388-3398 • Fax 800-234-7894 • Email [pal2000@horizonparts.net](mailto:pal2000@horizonparts.net)



# INTRODUCTION TO THE PAL-2000 UNDERWATER LIGHTING SYSTEM

# POWERITE PAL-2000

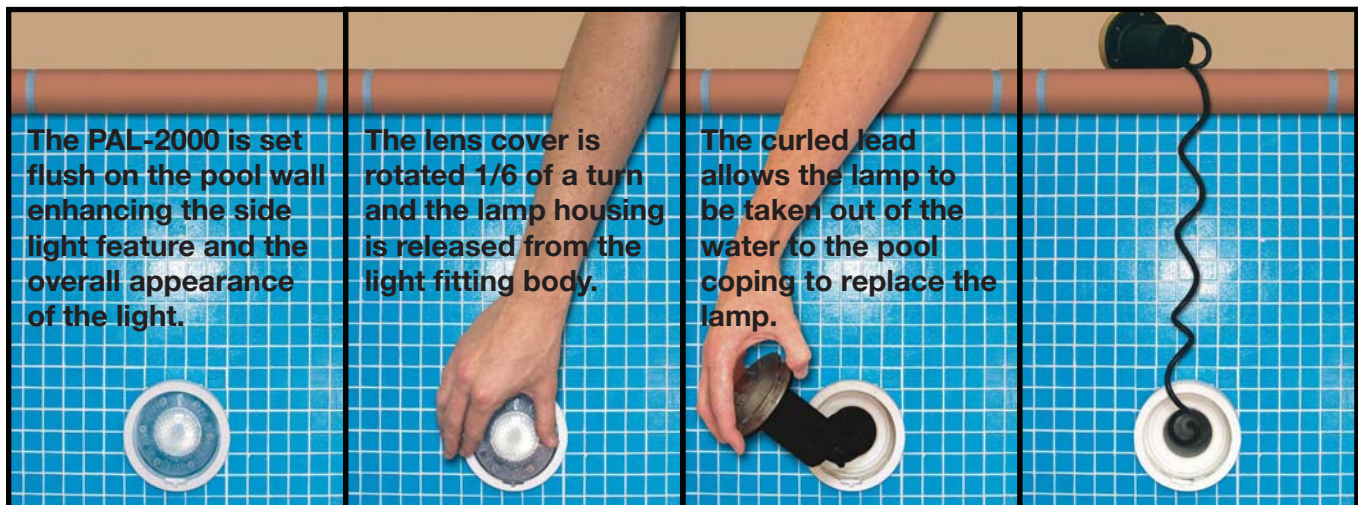
The **PAL-2000** is a unique Underwater Pool & Spa Lighting System.

A soft evenly distributed light is now possible from the moulded prismatic lens design that provides the **PAL-2000** with an outstanding illumination eliminating the end shadow effect common with other existing pool lights, all with a 10,000 hour life lamp.

The **PAL-2000** operates from a Safe 12V supply and is UL approved.

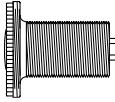


The **PAL-2000** has a unique extraction system allowing the light to be simply removed from the pool wall when the lamp has to be replaced as illustrated below.



## PAL-2000 Unique Features

- Compact Size. 60% Smaller than normal pool lights.
- Flush Fit to Pool Wall. The other lights protrude off the wall.
- Even Light Distribution. No other light has a flexible moulded prismatic lens.
- Side Light Feature. The end shadow effect common in other lights has been eliminated.
- Long Life Lamp. Fitted with new extra bright 10,000 Hour 12V Xenon lamp.
- Fully Approved Product. UL Listed E239438.
- No Earth Bonding Required. Due to fully insulated design.
- Non Leak Water Seal. No polycarbonate that cracks is used in the water seal.
- Flexible Lens. Absorbs pressure increase due to the expanding air when light is operated.
- Encapsulated cable terminations. Ensures no external cable or water seal deterioration due to heat.
- The PAL-2000 also has a range of "Clip-On" colored lenses. Blue, Green, Red & Orange.
- Optional Color Change LED Lamp. Can provide 7 different color effects.



**PAL-2000  
LIGHTING  
SYSTEM**

# PAL-2000 CONCRETE/FIBERGLASS LIGHT

**POWERITE  
PAL-2000**



PHOTO SHOWS LAMP HOLDER REMOVED

## PAL- 2000RU

50w, 12v, Underwater Light with 10,000 hour Xenon lamp, complete assembly with 79 ft cord, locking nut, and seal. Must use UL listed outdoor transformer. Light includes blue, green, and clear lenses.

**Horizon #**  
56-330-1000

**Manf. #**  
39-2RU

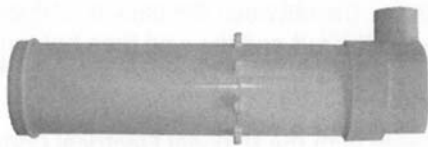


## PAL- 2000RCUK

Concrete conversion kit adapts standard PAL- 2000 light for use with concrete pool wall fitting.

**Horizon #**  
57-330-1050

**Manf. #**  
39-2RCUK

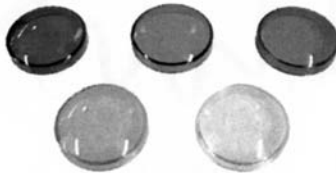


## PAL- 2000RCAS

Concrete pool wall fitting, when used with the concrete conversion kit, allows for the installation of a standard PAL- 2000 underwater light into a concrete installation.

**Horizon #**  
57-330-1055

**Manf. #**  
39-2RCAS



## PAL- 2000 Light Lens Accessories

<b>Horizon #</b>	<b>Description</b>	<b>Manf. #</b>
57-330-1060	Blue snap on lens	39-2CB
57-330-1062	Green snap on lens	39--2CG
57-330-1064	Red snap on lens	39-2CR
57-330-1066	Orange snap on lens	39-2CO
57-330-1068	Clear snap on lens	39-2CC
57-330-1075	Colored lens set	39-2CS



## 12v, 50W Xenon Replacement Bulb Kit

Super bright, 10,000 hour replacement bulb, shipped with new PAL 2000 light body O-ring.

**Horizon #**  
57-330-1080

**Manf. #**  
39-2DL50



## LAC MR-16 Digital Color Array Lamp

21 LED lights with 7 different color displays all rotating smoothly from one color to the next. Compatible with standard MR-16 Halogen bases, optional MR-16/GE912 adaptor available for use in standard spa light applications.

<b>Horizon #</b>	<b>Description</b>	<b>Manf. #</b>
57-330-1100	LAC MR-16 color array	39-LACU
57-330-1120	MR-16/GE912 adapter	39-LAA

# Assembly Information for PAL-2000RU light in Fiberglass Pools & Spas

## Important Information

- 1) Ensure that the electrical system for your pool conforms with all the requirements of the National Electrical Code (NEC) and all relevant local codes and ordinances.
- 2) This 12V Underwater Light must be installed in accordance with the National Electrical Code by a Certified Electrician or a Qualified Pool Technician. **NOTE: No Bonding Terminal is required on the forming shell since the fixture is an all plastic construction and complies with NEC article 680 Requirements.**
- 3) This Underwater light is designed for use with an Approved Low Voltage Transformer operating between 12 - 15V.

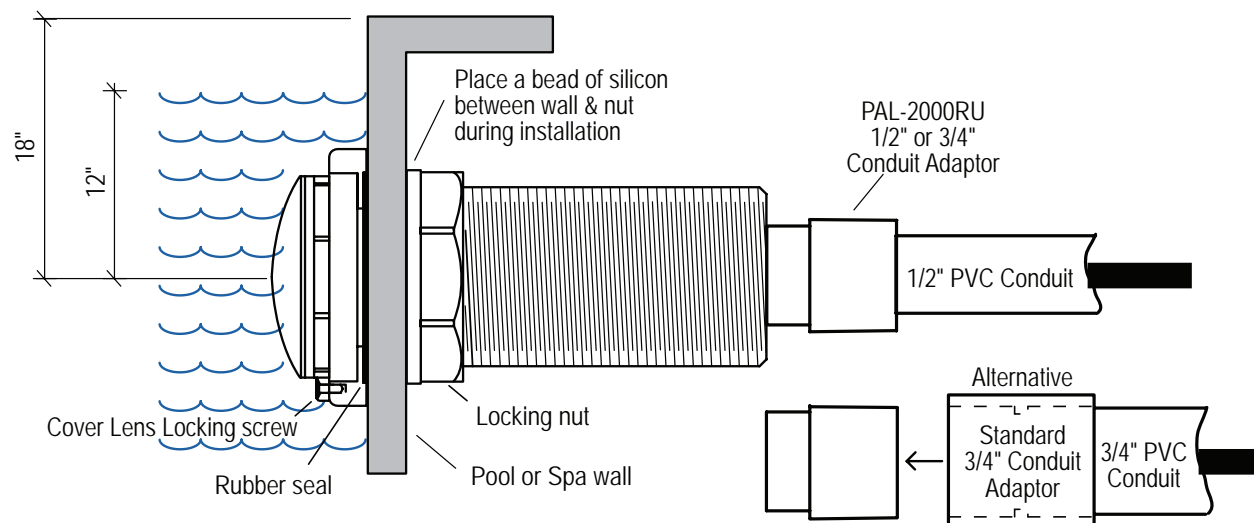
**DO NOT CONNECT THIS 12V LIGHT DIRECT TO A 120V CIRCUIT.**

- 4) Do not operate this Underwater Light for more than 30 Seconds unless it is totally submerged underwater.
- 5) Fit your PAL-2000RU Underwater Light/s as outlined in the following detailed installation instructions.

## Installation Instructions for PAL-2000RU Retractable Fitting in Fiberglass Pools/Spas

- Step 1. Locate the position for mounting the PAL-2000RU fitting at the center of one end of the pool or the center of both ends if required. If the pool is an irregular shape the fitting should be located in a position to obtain the best light spread in the pool. The fitting should be placed 12" below the water level or 18" below the top of the pool coping to provide the best illumination of the water and enable the retractable part of the fitting to be taken out of the pool if the lamp in the PAL-2000RU has to be replaced.
- Step 2. Drill a 2 3/8" mounting hole (2 3/8" to 2 1/2") at the selected location. After the hole is cut out, clean the area around the hole to remove rough spots and dust.
- Step 3. Fit the PAL-2000RU fitting in the hole ensuring the rubber seal is fitted at the between the back of fitting and the pool/spa wall as shown in the diagram. Place a bead of silicon between the nut and the wall then tighten up the nut firmly. If desired the rubber seal can also be replaced by silicon.
- Step 4. Connect the wire to an approved Low Voltage Transformer in accordance with the National Electrical Code (NEC). The conduit adaptor should be glued with solvent cement to the gland nut and 1/2" PVC conduit can be glued to the inside of the conduit adaptor. Alternatively a standard 3/4" conduit adaptor can be glued to the outside to fit 3/4" PVC conduit to the light.

### Assembly Details



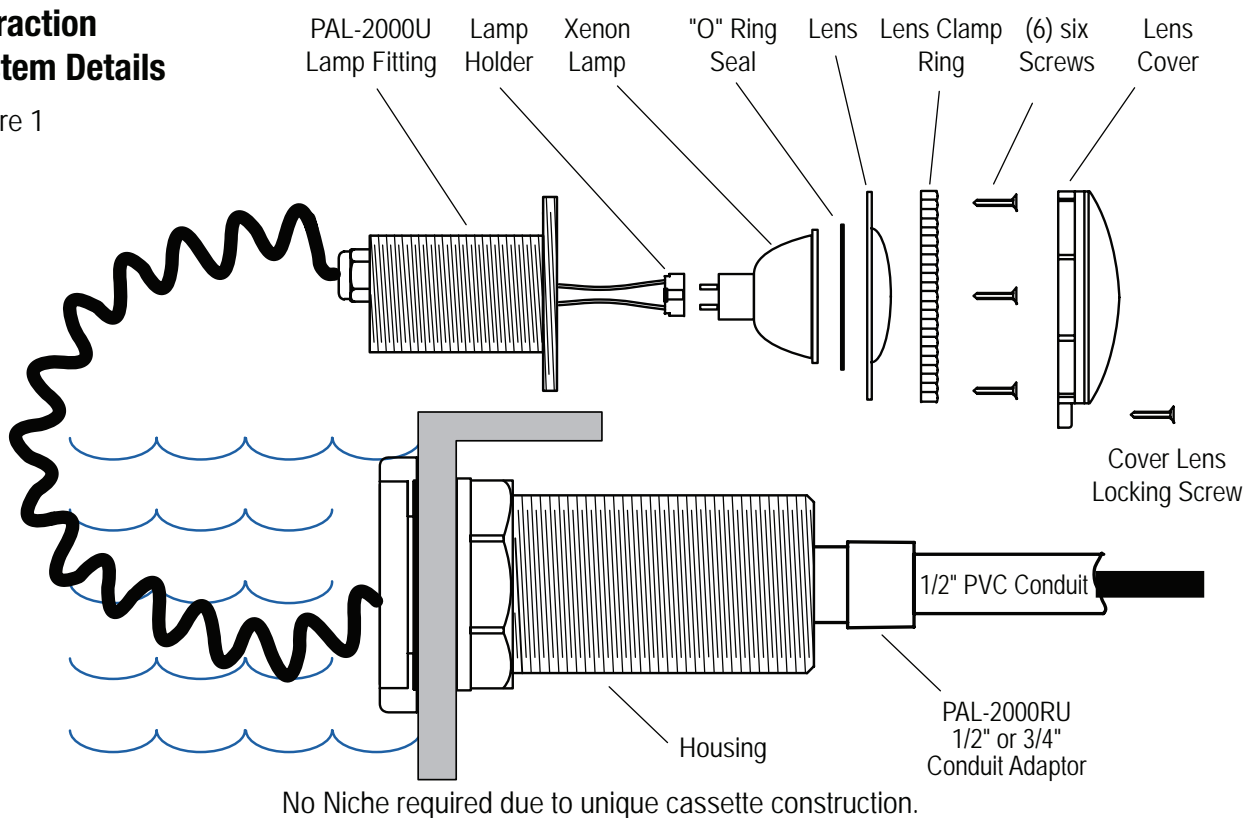
# Assembly Information for PAL-2000RU light in Fiberglass Pools & Spas

## Lamp Replacement Instructions for PAL-2000RU Retractable Fitting

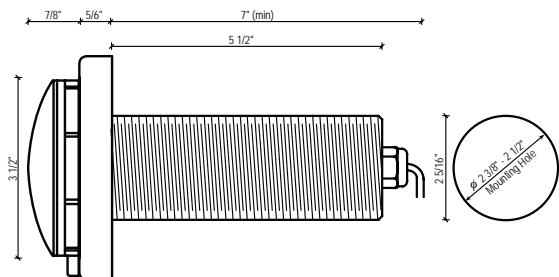
- Step 1. Unscrew the Cover Lens Locking Screw (shown in figure 2) until the lens cover can be twisted in an anti-clockwise direction to retract the lamp fitting from the housing (shown in figure 1).
- Step 2. Remove the clip-on lens cover with the aid of a screwdriver as shown in figure 3.
- Step 3. Unscrew the (6) six lens screws to unclip the lamp from the lamp socket as shown on the Assembly drawing.
- Step 4. Replace the Lamp. Note: To ensure reliable operation of your PAL-2000 it is essential to use a genuine PAL-2000RU Lamp/Seal Replacement kit part no. 39-2DL50 or FNV/CG 50 watt Xenon Lamp with UV Cover Glass. (No other) When the Lamp is replaced it is essential to maintain the water tight seal that the "O" ring be also replaced, the "O" ring seal is supplied with the Lamp/Seal replacement kit. (39-2DL50)
- Step 5. When reassembling the PAL-2000RU fitting ensure the "O" ring is sitting correctly and replace the (6) lens screws and ensure the screws are not overtightened. Fit the lens cover.
- Step 6. Feed the wire back into the body and twist the fitting in a clockwise direction to lock into position.

### Extraction System Details

Figure 1

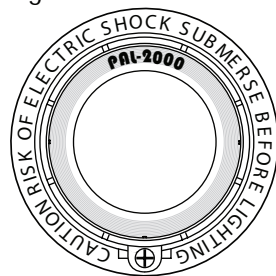


### Dimensional Details



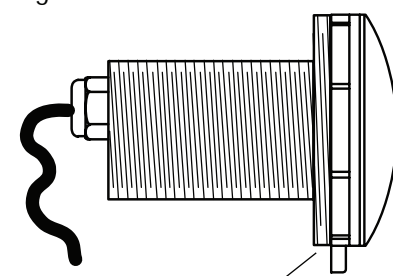
### Front View

Figure 2



### Side View of Lamp Fitting

Figure 3



Lens Locking Screw

Clip off with  
Screwdriver

# Assembly Information for PAL-2000RCU light in Concrete Pools & Spas

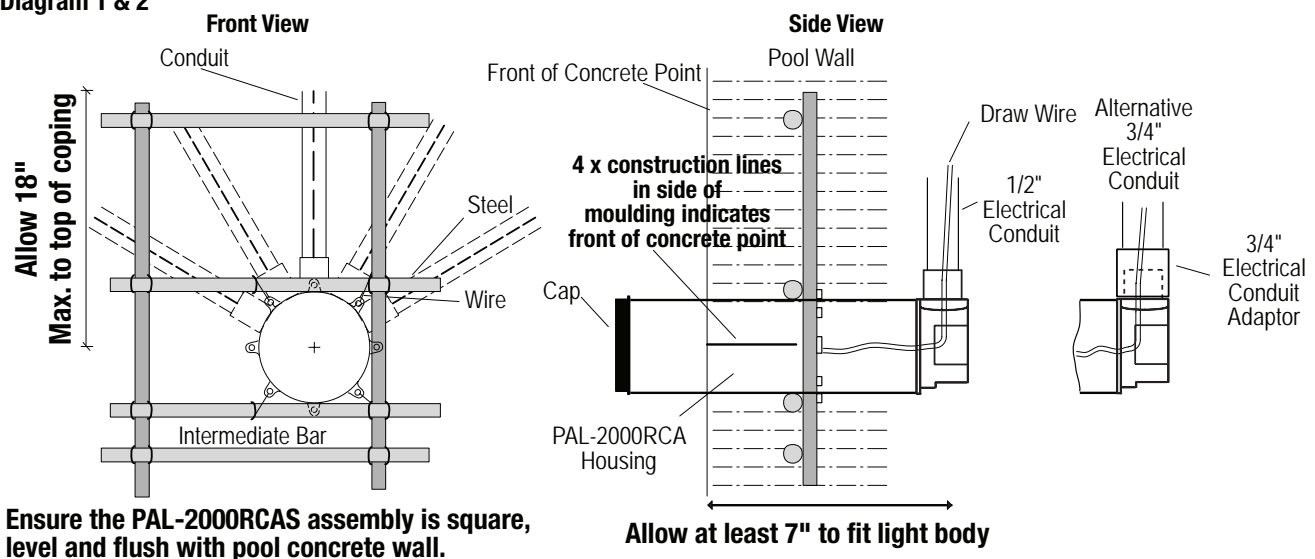
## Important Information

- 1) Ensure that the electrical system for your pool conforms with all the requirements of the National Electrical Code (NEC) and all relevant local codes and ordinances.
- 2) This 12V Underwater Light must be installed in accordance with the National Electrical Code by a Certified Electrician or a Qualified Pool Technician. **NOTE: No Bonding Terminal is required on the forming shell since the fixture is an all plastic construction and complies with NEC article 680 Requirements.**
- 3) This Underwater light is designed for use with an Approved Low Voltage Transformer operating between 12 - 15V.  
**DO NOT CONNECT THIS 12V LIGHT DIRECT TO A 120V CIRCUIT.**
- 4) Do not operate this Underwater Light for more than 30 Seconds unless it is totally submerged underwater.
- 5) Fit your PAL-2000RU Underwater Light/s as outlined in the following detailed installation instructions.

## Installation Instructions for PAL-2000RCU Retractable Fitting in Concrete Pools/Spas

- Step 1. Locate the position for mounting the PAL-2000RCAS fitting at the center of one end of the pool or at the center of both ends if required. If the pool is an irregular shape the fitting should be located in a position to obtain the best light spread in the pool. The fitting should be placed 12" below the water level or 18" below the top of the pool coupling to provide the best illumination of the water and enable the retractable part of the fitting to be taken out of the pool if the lamp in the PAL-2000RU has to be replaced.
- Step 2. Fit the PAL-2000RCAS wall housing into the selected position in the steel wire to secure it into position with the mounting lugs around the housing. Ensure the PAL-2000RCAS wall housing is level, square and flush with pool concrete wall. Glue 1/2" conduit into position and fit the draw wire as shown in Diagram 1 and 2.
- Step 3. After the concrete wall is set, trim the pipe down as shown below.
- Step 4. The standard PAL-2000RU light assembly now has the PAL-2000RCU adaptor glued with PVC glue to the Light assembly as shown in Diagram 3 and the standard clear lens cover fitted on the PAL-2000RU light assembly replaced by the protective cover supplied in the concrete pool conversion kit. (39-RCUK)
- Step 5. Before the pool finish is applied the PAL-2000RU with the PAL-2000RCU adaptor fitted should be glued into the PAL-2000RCAS wall housing using PVC glue to seal and locate the fitting into position, as shown in Diagram 5.
- Step 6. With the fitting in position in the Concrete Wall the Pool Finish can be applied to the front face of the fitting as shown on the assembly drawing. Note: The disposable Lens Cover fitted to the PAL-2000RU will protect the fitting while the finish is being applied. The protective lens cover is replaced by the normal lens cover supplied with the PAL-2000RU when the pool is ready to be filled with water.

Diagram 1 & 2



# Assembly Information for PAL-2000RCU light in Concrete Pools & Spas

Diagram 3

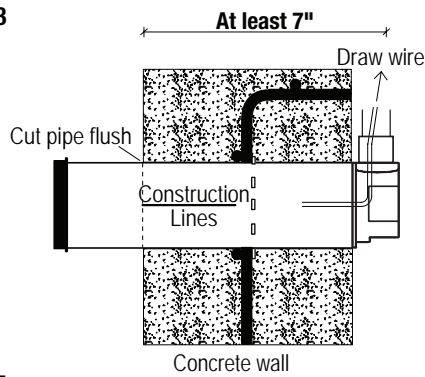


Diagram 4

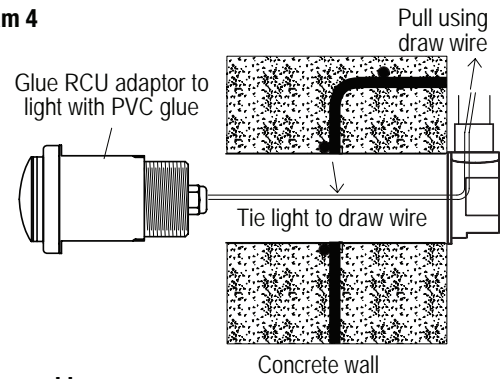
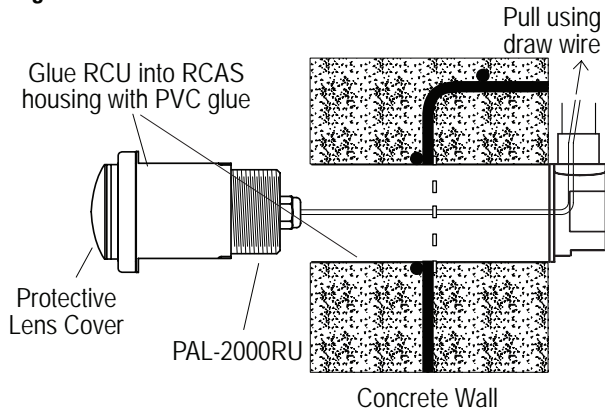
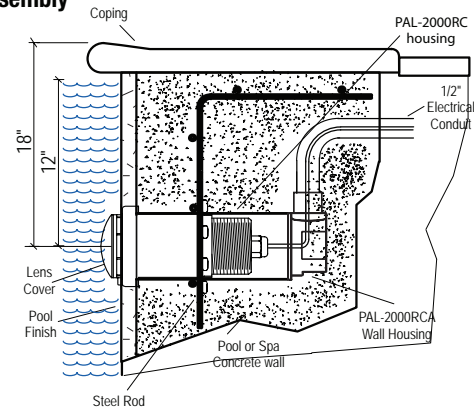


Diagram 5



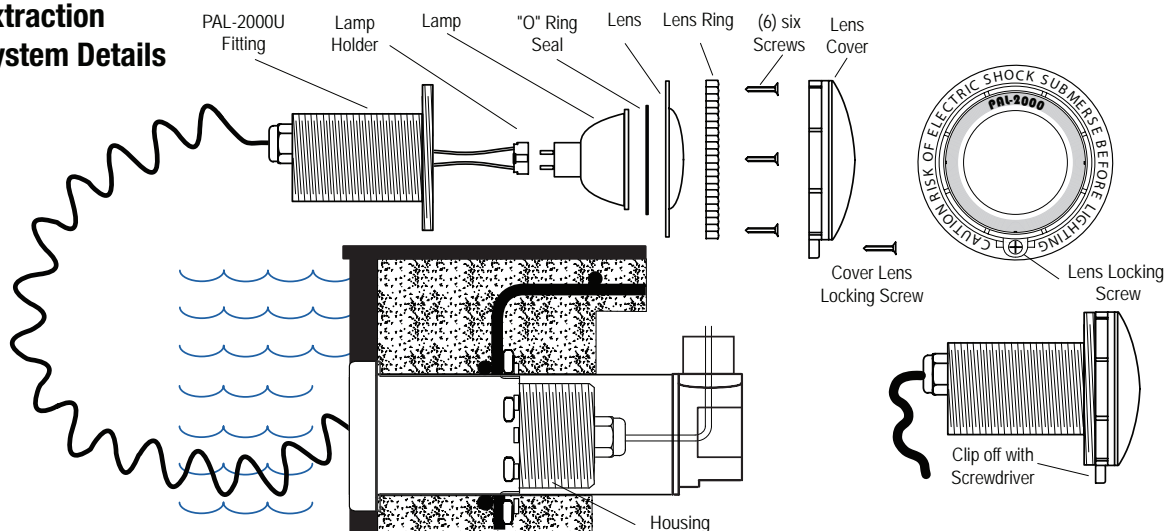
Final Assembly



## Lamp Replacement Instructions for PAL-2000RCU Retractable Fitting

- Step 1. Unscrew the Cover Lens Locking Screw until the lens cover can be twisted in an anti-clockwise direction to retract the lamp fitting from the housing (shown in figure 1).
- Step 2. Remove the clip-on lens cover with the aid of a screwdriver.
- Step 3. Unscrew the (6) six lens screws to unclip the lamp from the lamp socket as shown on the Assembly drawing.
- Step 4. Replace the Lamp. Note: To ensure reliable operation of your PAL-2000 it is essential to use a genuine PAL-2000RU Lamp/Seal Replacement kit part no. 39-2DL50 or FNV/CG 50 watt Xeon Lamp with UV Cover Glass. (No other) When the Lamp is replaced it is essential to maintain the water tight seal that the "O" ring be also replaced, the "O" ring seal is supplied with the Lamp/Seal replacement kit. (39-2DL50)
- Step 5. When reassembling the PAL-2000RU fitting ensure the "O" ring is sitting correctly and replace the (6) lens screws and ensure the screws are not overtightened. Fit the lens cover.
- Step 6. Feed the wire back into the body and twist the fitting in a clockwise direction to lock into position.

### Extraction System Details





To complement the PAL-2000 line of Underwater and Landscaping Lighting Products, the LACU Digital Color Change Array has been developed utilizing New Ultra-Bright LED Technology and is available at an attractive price point.

With standard MR-16 dimensions and no external controller required, the outstanding new LACU Color Array can be used in any existing PAL-2000 Underwater Pool or Landscaping Light or can be used to replace any standard 12V MR-16 Lamp. In addition, the use of a simple adapter allows the LACU Color Array to be retrofitted into applications using the GE-912 bulb!

The PAL-2000 LACU Digital Color Change LED Array automatically incorporates 7 different color effects and, with it's Color Unison feature, enables an unlimited number of lights to be synchronized to change color in unison.

#### FEATURES

- Ultra-Bright LED Technology
- Long Life – up to 100,000 hours
- Low Power, Low Heat
- Compatibility with existing MR-16 lamps
- Retrofits into GE-912 Base with adapter
- No external controller required
- Provides the only simple low cost conversion to color change in MR-16 type lights
- Can be used in fittings in and out of water
- Attractive price points

