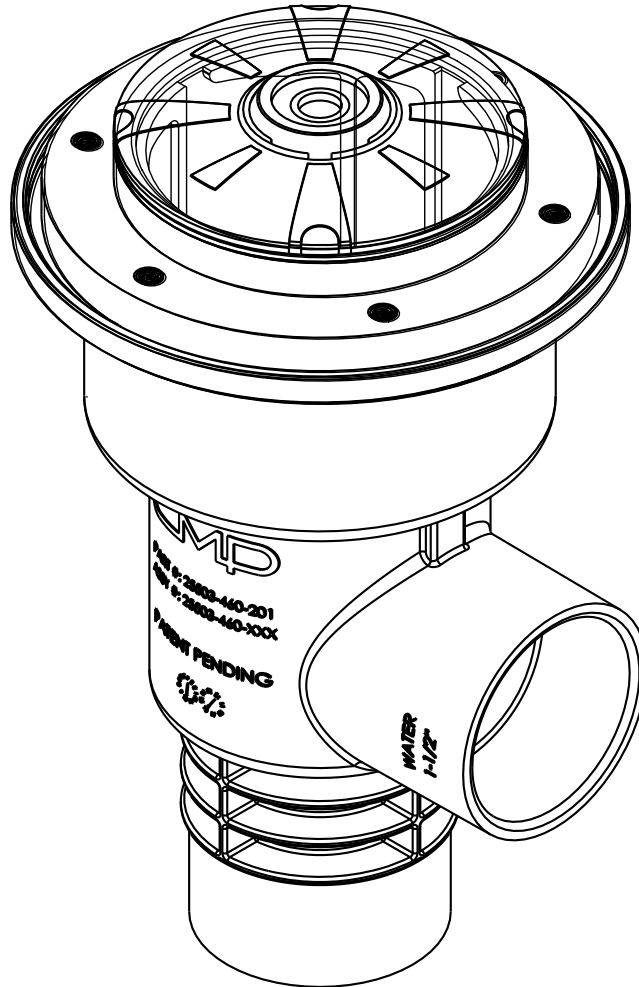# CMP

BRILLIANT WONDERS® 4" LED BUBBLER
INSTALLATION INSTRUCTIONS & PRODUCT MANUAL

25503-460-XXX
25503-460-XXXP
25503-460-XXXH

Cord Lengths Available:
25', 50', 100', 150'

Brilliant
Wonders®
LED BUBBLERS

LED WATERFALL | LED BUBBLER | LED LIGHTS | LED LAMINAR

PATENT
PENDING

ETL LISTED
C US
Intertek
4006147

CMP DOCUMENT 11120-000-000

IMPORTANT WARNINGS & SAFETY INSTRUCTIONS

⚠ DANGER
Serious bodily injury or death can result if these lights are not installed and used correctly.

⚠ WARNING
Installers, pool operators and pool owners must read these warnings and all instructions before using these lights.

⚠ WARNING
Before installing this product, read and follow all warning notices and instructions in this guide. Failure to follow warnings and instructions can result in severe bodily injury, death, or property damage.

⚠ WARNING
These underwater swimming pool lights must be installed by a licensed or certified electrician or a qualified pool professional in accordance with the National Electric Code (NEC) or Canadian Electric Code (CEC), CSA C22.1.

⚠ CAUTION
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 electric shock. Always disconnect power to the pool lights before servicing.

⚠ WARNING
Turn off power to light before installation/service. CMP Brilliant Wonders® 4" LED Bubbler light module is a low voltage light and should never be electrically connected to a power source other than an approved pool "Safety Rated," UL listed, outdoor rated, 12 VAC transformer. Failure to comply will either damage or destroy the light and will void the warranty.

NOTICE
No separate ground or bonding wire is required for the CMP Brilliant Wonders® 4" LED Bubbler light module which have no exposed metal. They do not require a niche.
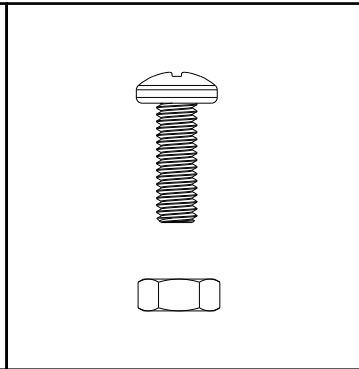
NOTICE
Save these instructions. This installation and user guide contains important information about the installation, operation, and safe use of this swimming pool/spa light. This guide should be given to the owner and/or operator of this equipment.
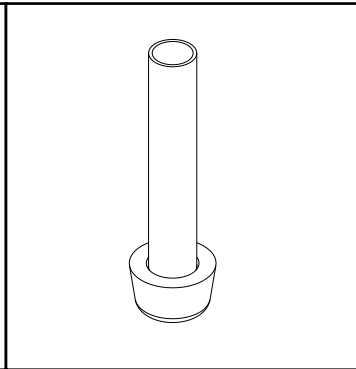
PART & TOOLS LIST

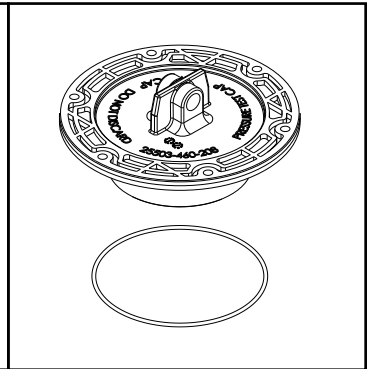## INCLUDED PARTS - 4" BUBBLER BOX
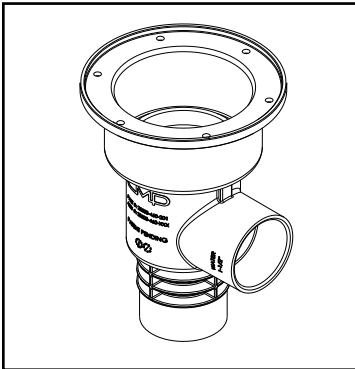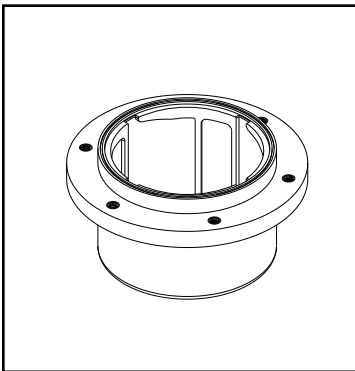

Main Body Assembly

Pressure Test Hardware
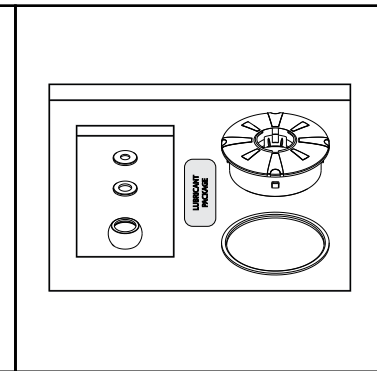6X M4 Machine Screws
6X M4 Hex Nuts

Stopper Assembly

Pressure Test Cap And
Pressure O-Ring
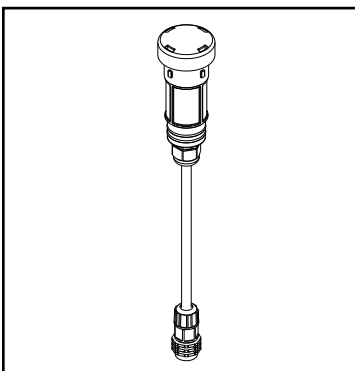

Floating Collar
(Gunite Only)

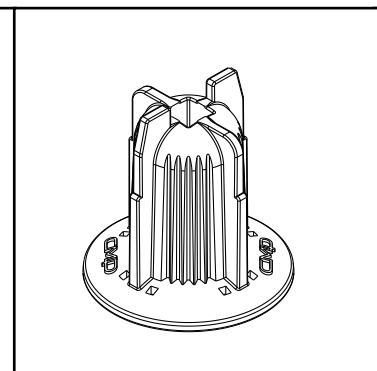Large Lens, L-Gasket, Eyeball,
Orifice Discs, Lubricant

REQUIRED TOOLS

1. 7 mm Wrench
2. 3/8" Socket Wrench
3. 3/8" Socket Extender
4. PVC Glue
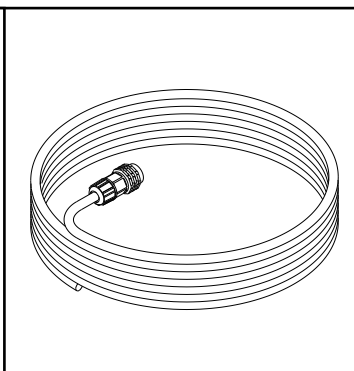5. Level
6. Phillips Head Screw Driver
7. O-Ring Lubricant

INCLUDED PARTS - LED LIGHT BOX

Led Light Module
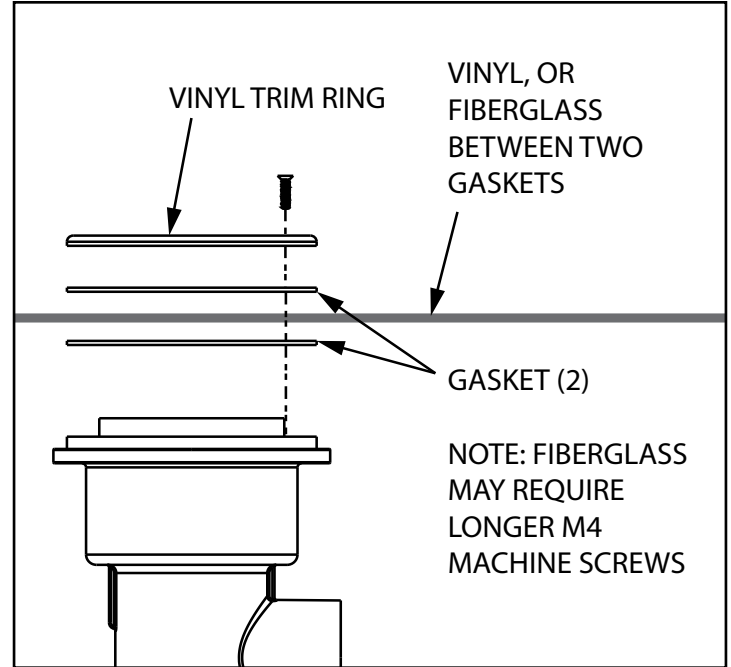

Installation Tool

Electric Cable

INSTALLATION STEPS

VINYL/FIBERGLASS POOL INSTALLATION STEPS

1. Use a 3.5" hole saw and cut a hole in the desired location of the 4" Bubbler.
2. Use template included with your Vinyl Faceplate Kit to drill six holes around the 3.5" hole using an 11/64" or #17 drill bit.
3. Install one gasket under the vinyl, or fiberglass, and one on the water side.
4. Secure the Vinyl Trim Ring with the 6 x M4 Stainless Steel Screws included with your Vinyl Liner Kit.

> **NOTICE**
>
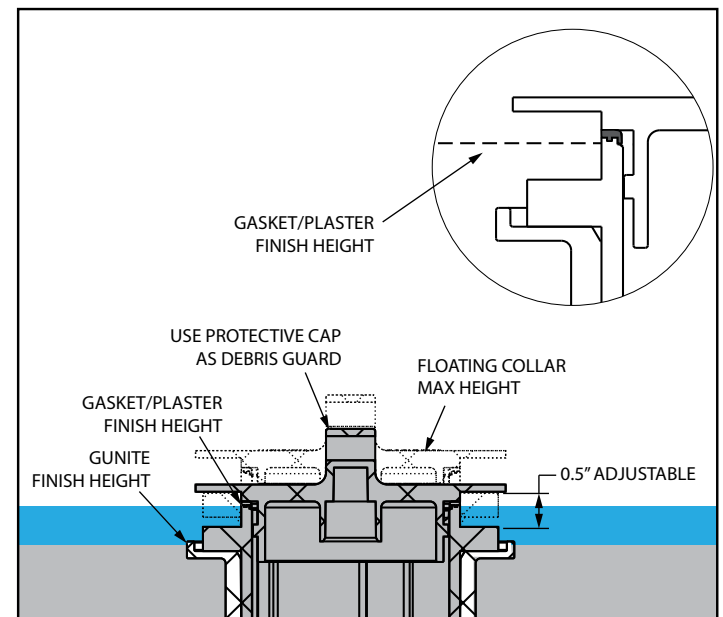> Fiberglass installation may require longer M4 Stainless Steel Screws (not included).

GUNITE INSTALLATION STEPS

1. Install gunite up to flange of the Main Body.
2. Use Pressure Test Cap (25503-460-208) as a debris guard while installing gunite.
3. Determine finishing height of the plaster.
4. The finishing height of the plaster should line up just below the top of the Floating Collar.
5. The Floating Collar is designed to allow up to 0.5" of adjustability before gluing, to better match the final plaster height.
6. Glue Floating Collar into main body using PVC glue.
7. Wait for glue to dry then install the plaster to just below the top of the Floating Collar.

VINYL TRIM RING

VINYL, OR FIBERGLASS BETWEEN TWO GASKETS

GASKET (2)

NOTE: FIBERGLASS MAY REQUIRE LONGER M4 MACHINE SCREWS

VINYL LINER KIT PART LIST

1. Decorative Ring
2. 2x Gaskets
3. M4 Stainless Steel Screws (6)
4. Cutting Template

GASKET/PLASTER FINISH HEIGHT

USE PROTECTIVE CAP AS DEBRIS GUARD

FLOATING COLLAR MAX HEIGHT

GASKET/PLASTER FINISH HEIGHT
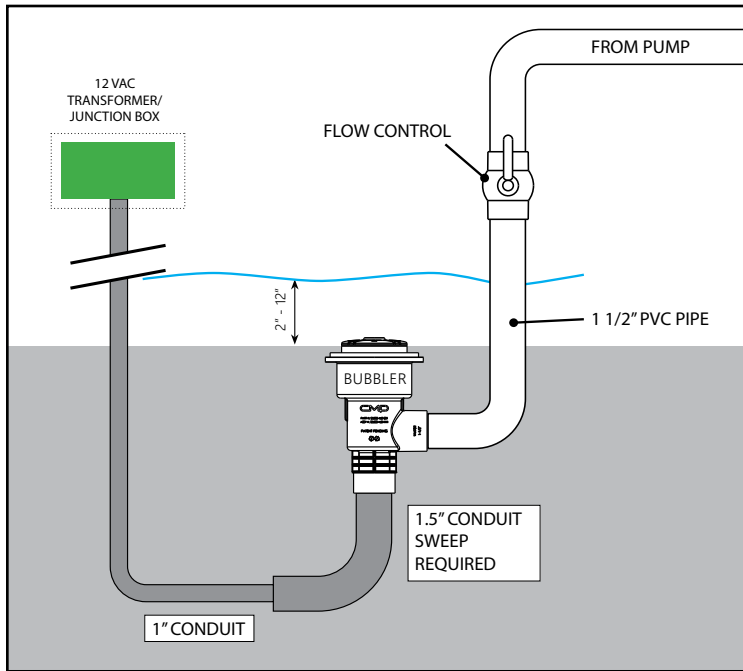
GUNITE FINISH HEIGHT

0.5" ADJUSTABLE

> **NOTICE**
>
> Make certain that all screws and hex nuts are hand tight before pressure testing the unit

PLUMBING & ELECTRICAL DIAGRAMS

GENERAL PLUMBING GUIDE

FROM PUMP

12 VAC TRANSFORMER/ JUNCTION BOX

FLOW CONTROL

2" - 12"

1 1/2" PVC PIPE
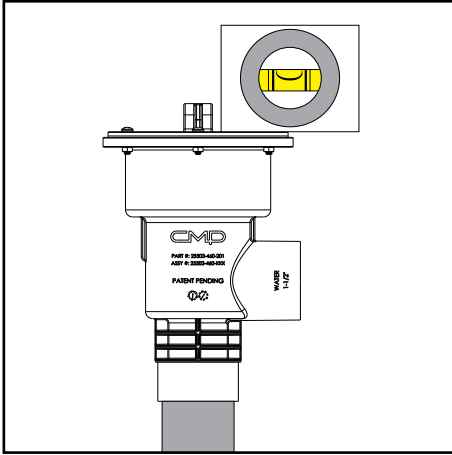
BUBBLER

1.5" CONDUIT SWEEP REQUIRED

1" CONDUIT

- Water inlet is 1.5" PVC socket.
- Power inlet is 1.5" conduit socket.
- A minimum of one (1.5" x 90°) sweep conduit required. After this, 1" conduit can be used to the junction box.
- Water depth must be between 2"-12".
- Beach entry slope must not exceed 1/12 grade to keep plume perpendicular with water surface.
- Pressure test all pipe fittings according to your local building codes.
- Your 4" Bubbler is shipped ready to pressure test.

GENERAL ELECTRICAL DIAGRAM

CONTROL BOX ABOVE WATER LEVEL

12V AC ONLY

12VAC

18" - 24" EXTRA SLACK FOR A SERVICE LOOP

1.5" x 90° SWEEP REQUIRED

1" CONDUIT
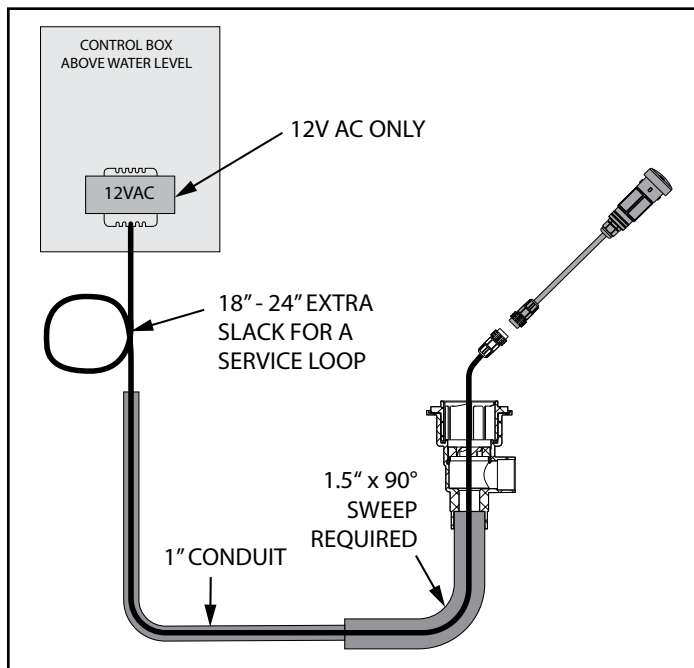
- Connect CMP 4" Bubbler LED Light Module to a 12V AC transformer. Listed, outdoor rated 12VAC transformer must be used. Check that the transformer's wattage and amperage are not exceeded by the total wattage and amperage in use (load).
- CMP 4" Bubbler LED Light Module (25503-460-900) final operating depth must be at least 2" underwater.
- A minimum of one (1.5" x 90°) sweep or 12" of straight conduit must be installed into the electical socket on the bottom of the 4" Bubbler.
- Use sweeps only in electrical conduit line. No 90° bends.

STEP-BY-STEP INSTALLATION GUIDE
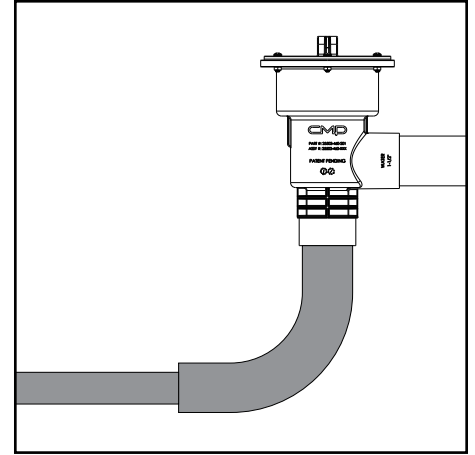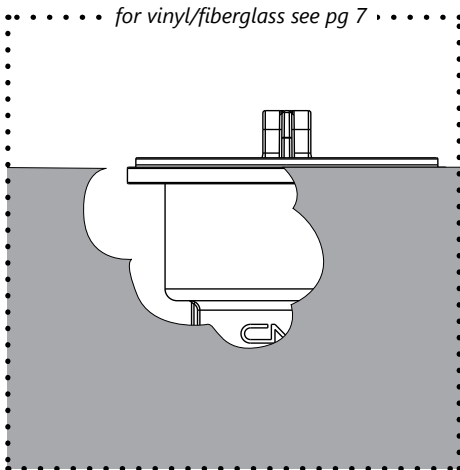

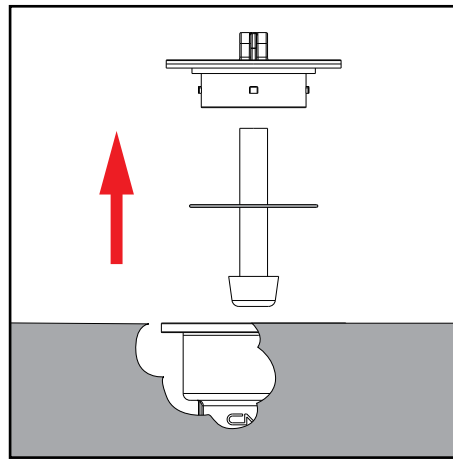1. Post and level the 4" bubbler unit.
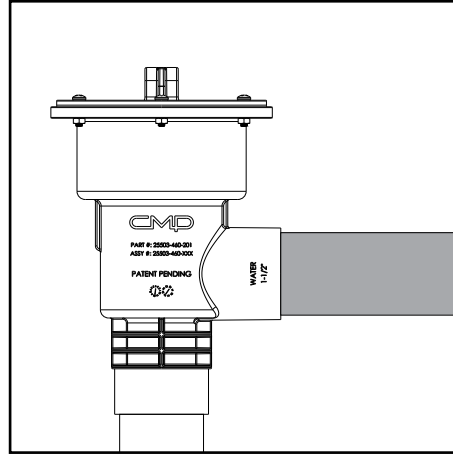
2. Install plumbing using PVC glue. Make sure screws are tight then pressure test the unit.

3. Install conduit. 1.5" × 90° sweep required. Can use 1" conduit to the junction box.

for vinyl/fiberglass see pg 7

4. Remove screws and nuts. Leave cap for debris guard. Install concrete/gunite to top of unit.

5. Remove Pressure Test Cap, pressure o-ring and the stopper assembly.

for vinyl/fiberglass see pg 7

0.5" - 1.1" PLASTER THICKNESS
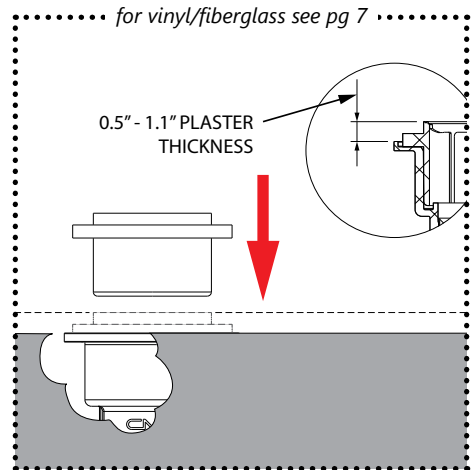
6. Determine plaster height. Use PVC glue and install collar with plaster height slightly below top of collar.

for vinyl/fiberglass see pg 7
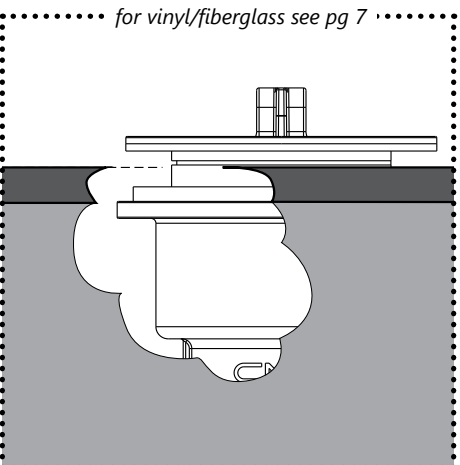
7. Replace Pressure Test Cap as a debris guard. Install plaster up to slightly below the top of the collar.

12V AC ONLY

12VAC

18" - 24" EXTRA SLACK FOR A SERVICE LOOP
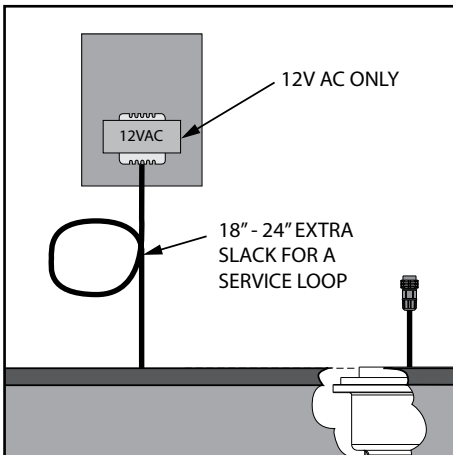
8. Install electric cable to a 12VAC transformer. Leave 18"- 24" service loop at the control box.

APPLY O-RING LUBRICANT
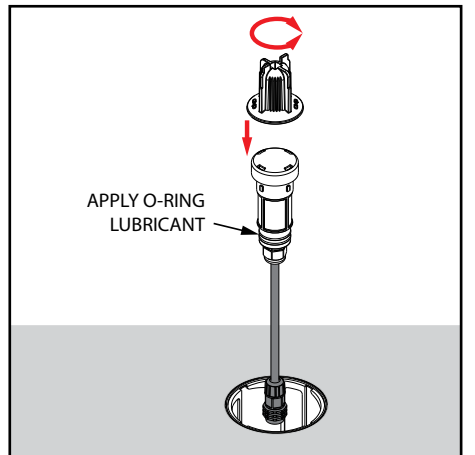
9. Apply lubricant to bottom of LED module. Install LED module with Installation Tool. Rotate clockwise until it clicks.

STEP-BY-STEP INSTALLATION GUIDE CONTINUED

APPLY O-RING
LUBRICANT
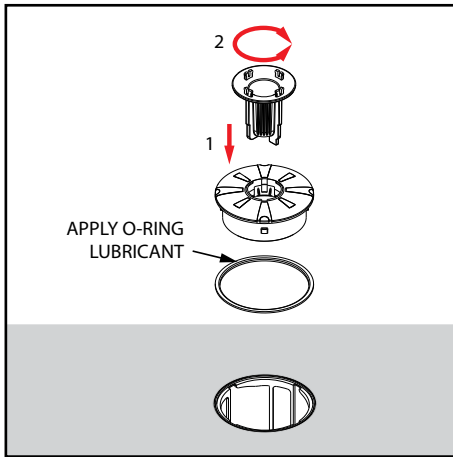
10. Install L-gasket making sure it is seated properly in the groove. Apply lubricant to top of L-gasket. Install large lens using the Installation Tool. Rotate clockwise until you feel a "click" and the lens stops rotating.

11. Install orifice disc into the eyeball. Install eyeball into large lens by rotating 90° and inserting. Rotate eyeball to desired position.

VINYL/FIBERGLASS **ONLY** INSTALLATION STEPS

All installation steps are the same for vinyl/fiberglass installation as they are for gunite installation, except the adjustable collar comes pre-glued from our factory for the vinyl/fiberglass units.

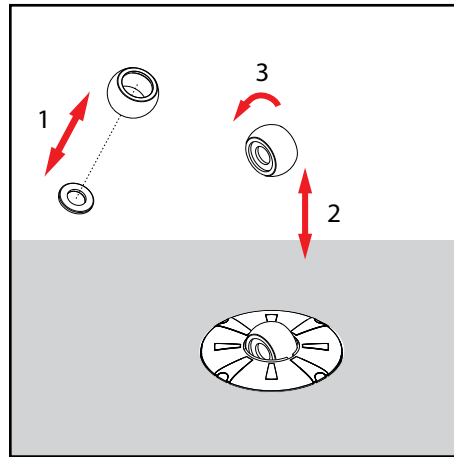3.5" HOLE SAW

USE PAPER TEMPLATE AND 11/64 DRILL BIT
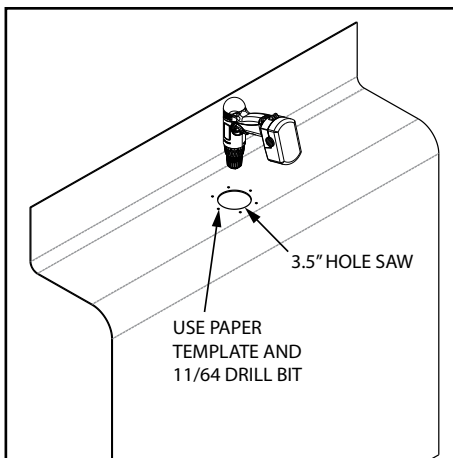
1. Cut hole in desired location using 3.5" hole saw. Use paper template to drill 6 holes using 11/64 drill bit.

VINYL TRIM RING

VINYL, OR FIBERGLASS BETWEEN TWO GASKETS

GASKET (2)

NOTE: FIBERGLASS MAY REQUIRE LONGER M4 MACHINE SCREWS
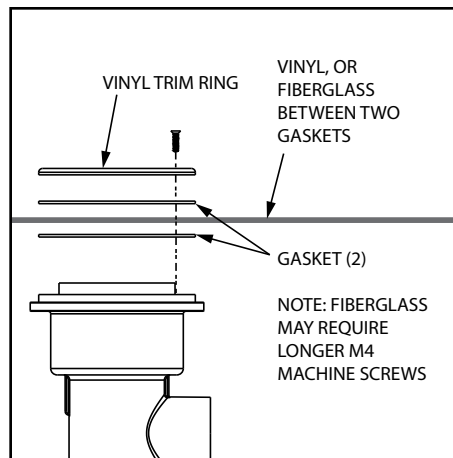
2. Secure bubbler to vinyl/fiberglass shell using Trim Kit.

REMOVE AFTER PRESSURE TEST
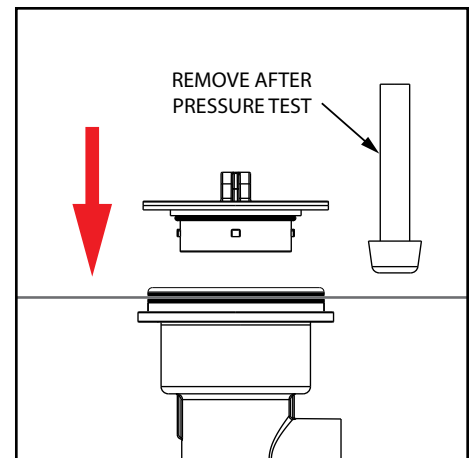
3. To pressure test, install Pressure Test Cap and O-Ring into bubbler. Rotate clockwise until it stops rotating. Pressure test the unit. Remove cap, and stopper.

7

OPERATING PROCEDURES

WATER PATH OPERATING PROCEDURES

25°

TWO ORIFICE SIZE OPTIONS
3/8" and 1/2"
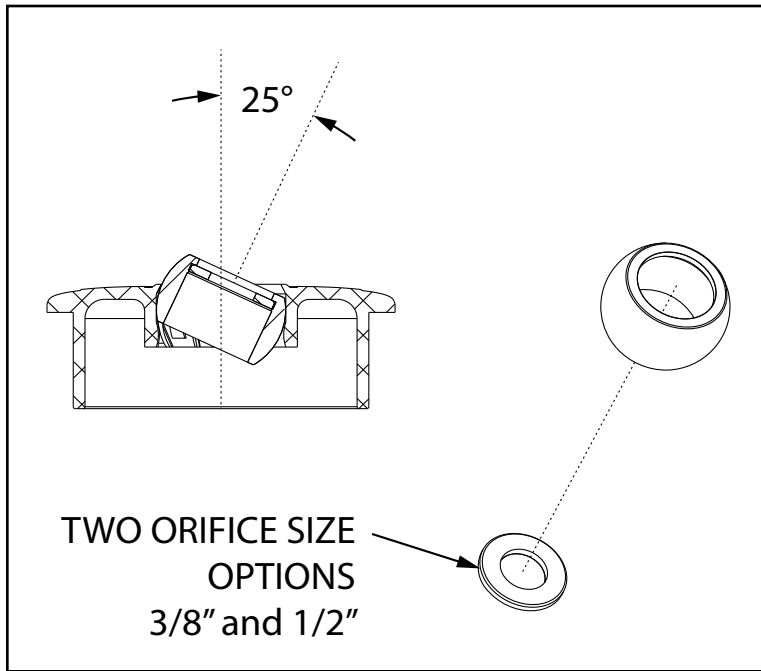
- The adjustable Eyeball can be angled up to 25° from vertical.
- The Orifice Disk snaps into the Eyeball.
- Two orifice size options are included with your 4" Bubbler: 3/8" and 1/2".
- A smaller orifice opening will have higher water pressure and plume height.
- A larger orifice opening will have lower water pressure and plume height.
- Flow control valve can be adjusted to meet desired performance.

NOTICE

The Stopper Assembly can be used for installing Orifice Discs. (see pg 3)

PERFORMANCE CHART

1. Factors such as water flow rate, orifice size and water depth above the orifice will all contribute to the final look of the plume height. The performance chart below can be used as a reference in deciding how to install your 4" Bubbler.

Flow Rate vs Plume Height
for 1.5" Plumbing

water depth
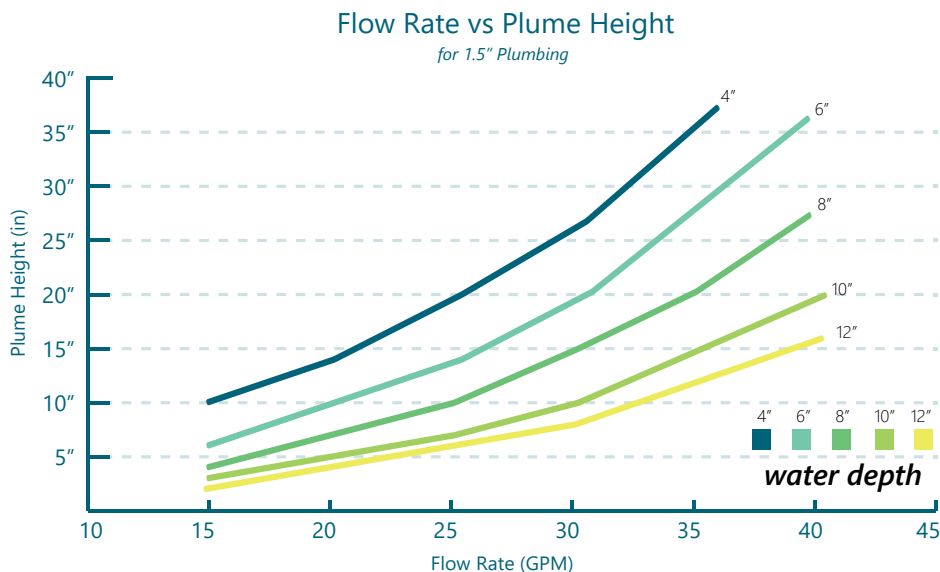
NOTICE Results may vary.

MAINTENANCE INSTRUCTIONS

GENERAL MAINTENANCE INSTRUCTIONS

APPLY O-RING LUBRICANT TO L-GASKET BEFORE REINSTALLING

WINTERIZING STEPS

1. Remove the eyeball from the large lens by rotating eyeball 90° and lifting out vertically.
2. Remove the large lens by inserting the top of the installation tool into the eyeball cavity like a key, then rotating counter-clockwise.
3. Remove the large lens from the floating collar using the installation tool then replace the eyeball back into the large lens for storage.
4. Remove the L-gasket that is directly below the large lens.
5. Remove the LED light module using the installation tool.
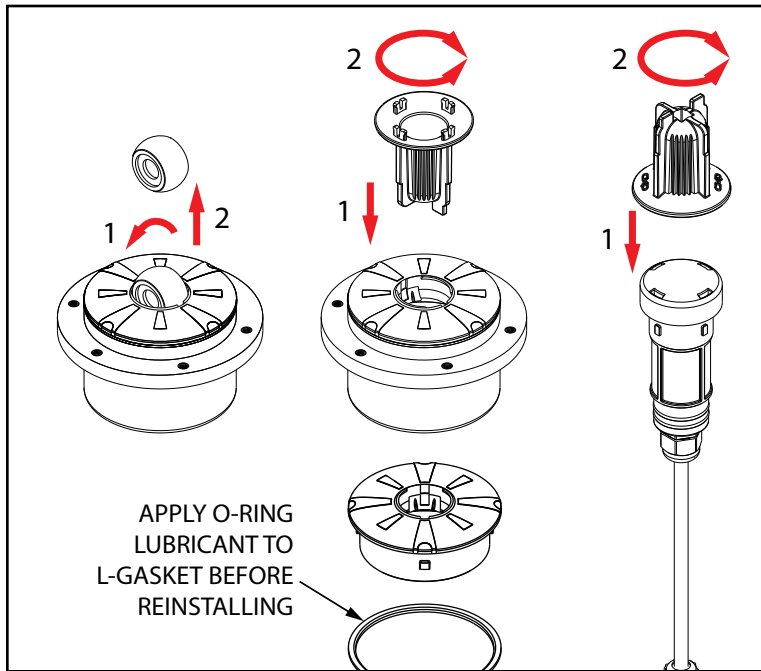6. Secure the wire inside main body, use tape to prevent the cord from retracting back into the conduit.
7. Use an air compressor to blow the water line free of water.
8. Install the pressure test cap (25503-460-208) on the bubbler for the duration of winter.
9. Store the large lens with eyeball, L-gasket, and LED light module in a dry place for winter.

NOTICE

- Do not damage or misplace the sealing L-Gasket that in underneath the large lens.
- To remove the LED Light Module, insert the four snaps on the Installation Tool into the four snap receptors on the small LED lens. Use a 3/8" socket extender to insert into the square hole on the top of the Installation Tool. Rotate counter-clockwise until you feel a click. Then keep rotating until the Light Module unseals itself from the conduit. Pull the Installation Tool upwards and remove the LED Light Module.

⚠ CAUTION

When removing the LED Light Module, make sure to not let the power cable fall back down into the conduit. Use tape or a paper clip around the power cord to prevent this from happening prior to disconnecting.

9

NOTES

NOTES

NOTES

TROUBLE SHOOTING/FAQ

TROUBLE SHOOTING

Problem	Solution 1	Solution 2
Large Lens is hard to install and/or remove.	Apply O-Ring lubricant to the top of the L-Shaped gasket under the large lens	Make sure L-Gasket is properly aligned and seated in the groove.
Light Module is hard to install and/or remove.	To install, push the module down with force to seal the bottom O-Rings in the electrical conduit socket. Use the Installation Tool, a 3/8" socket wrench, and a 3/8" socket extender to help turn the Light Module clockwise until it reaches the locked position.	To remove, use the Installation Tool, a 3/8" socket wrench, and a 3/8" socket extender to turn the Light Module counter-clockwise. Ramps in the Center Wheel will help un-seal the O-Rings from the conduit socket as it rotates.
LED Light Module flashes and then goes dark.	Make sure you are using a 12VAC transformer not 120V directly from a power outlet.	Make sure you are using a 12VAC transformer (not sold by CMP) and not the CMP 12V DC Power Supply (25650-110-200).
Can not pull the LED Light Module out of the Bubbler unit.	No slack was left in the line. Provide slack on the power cable by coiling some extra wire on the control box side of the installation.	Have another person help by pushing the electric cable from the control box side of the installation.
Swirling or sloshing water	The 4" Bubbler was installed too close to a wall or other feature in the pool which causes a harmonic wave to occur in the water. Angle the eyeball differently to change the water harmonics.	Try changing your GPM flow rate using a flow control valve.

LED OPERATION INSTRUCTIONS

NOTICE When syncing multiple LED light products, color shows will match but cycle timings may vary.

CMP/J-STYLE COLOR SELECTION AND SYNC INSTRUCTIONS

The CMP/J-STYLE Brilliant Wonders® 1.5" LED Light is preprogrammed with the following color sequence:

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

To operate the light and change colors:

- Turn the light ON. The first time the light is turned on, the color sequence will begin with Alpine White. To change color, turn light OFF then back ON within three (3) seconds. Continue turning OFF and ON until the desired light color mode is reached.
- When the light is turned off for more than seven (7) seconds, it will remain in the color mode that was currently active when the light was turned off.
- To RESET the light to the beginning color sequence (Alpine White), turn the light OFF, wait four (4) to six (6) seconds, then turn the light ON.

NOTICE CMP Brilliant Wonders® LED Products can be used with Jandy® controls. Refer to operating instructions for your control box. "J-style" must be ordered for compatibility.

H-STYLE COLOR SELECTION AND SYNC INSTRUCTIONS

The H-STYLE Brilliant Wonders® 1.5" LED Light is preprogrammed with seventeen light modes:

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

To operate the light and change colors:

- The H-STYLE Brilliant Wonders® 1.5" LED Light is operated through power-cycling; a method of changing modes which requires no special controller or interface. To activate the light simply turn the power switch ON. To advance to the next programmed light mode, turn the switch OFF then back ON within ten (10) seconds. Whenever the light has been off for more than sixty (60) seconds, and it is first turned on, it will come on white for 15 seconds, then go back to the last programmed light mode it was running before being powered off.

To sync the light with additional H-STYLE lights:

- The H-STYLE Brilliant Wonders® 1.5" LED Light can easily be synced with additional H-STYLE lights. All lights should be wired to the same switch, this should automatically sync the lights. If the lights get out of sync on the same switch: turn the switch OFF, then wait between eleven (11) and fourteen (14) seconds and turn the switch back ON. When the lights come back on, they should enter program mode number one (1) and be synchronized.

NOTICE CMP Brilliant Wonders® LED Products can be used with Hayward® controls. Refer to operating instructions for your control box. "H-style" must be ordered for compatibility. Not compatible with Hayward® Networked Lights.

P-STYLE COLOR SELECTION AND SYNC INSTRUCTIONS

The P-STYLE Brilliant Wonders® 1.5" LED Lights can be controlled using a standard wall-mount light switch. Multiple lights can be connected via a junction box to a single switch so that all lights can be switched ON and OFF together. P-STYLE Lights are controlled by cycling the AC power from a standard wall switch. By turning the switch ON and OFF a specific number of times, the light activates one of the seven (7) light show modes, fixed colors, and enables the "Hold" and "Recall" feature.

The P-STYLE Brilliant Wonders® 1.5" LED Light is preprogrammed with seven light show modes (1-7) and five fixed color modes (8-12). For saving color effects during the "show" modes the light also includes and "Hold" and "Recall" feature (13-14).

SEQUENCE ORDER	COLOR MODE
1	SAm® Mode
2	Party Mode
3	Romance Mode
4	Caribbean Mode
5	American Mode
6	California Sunset Mode
7	Royal Mode
8	Blue
9	Green
10	Red
11	White
12	Magenta
13	Hold*
14	Recall*

Example to operate the light and change to "California Sunset" show mode:
- Turn the light switch ON and OFF six (6) times.
- During the ON/OFF switching process, no illumination will occur, then a white light will momentarily illuminate.
- The white light will immediately be followed by the selected "California Sunset" mode.

*Hold and Recall Features Example (Designed for use with a controller. Can be done manually following these steps):
- Use the "Hold" feature to capture a unique color effect while any color show is active.
  - Turn switch on and off thirteen (13) times. Held color effect is activated.
- From any light show or fixed color mode...
  - Turn switch ON and OFF fourteen (14) times to activate last saved color effect.
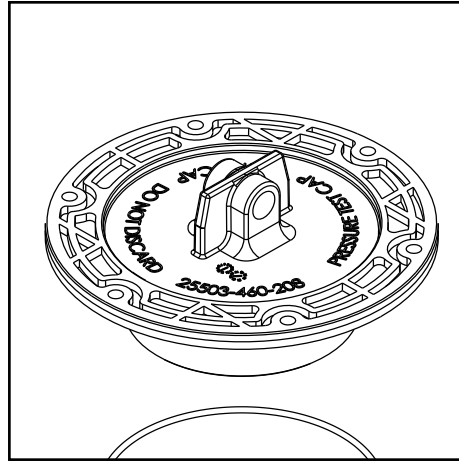 - Saved color effect is displayed.

NOTICE CMP Brilliant Wonders® LED Products can be used with Pentair® controls. Refer to operating instructions for your control box. "P-style" must be ordered for compatibility.
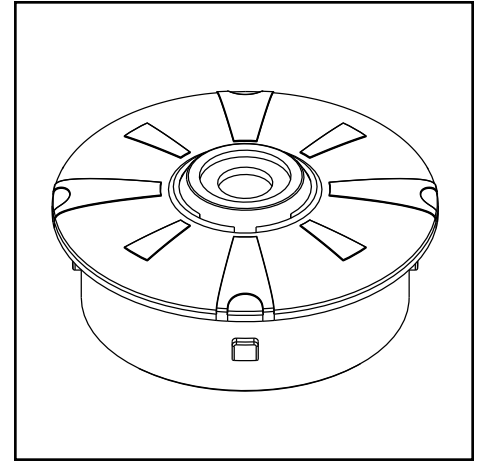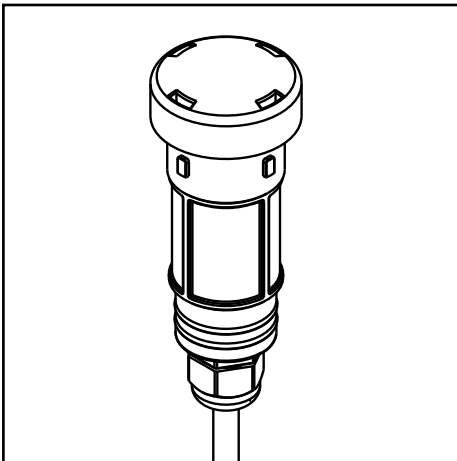
AVAILABLE ACCESSORIES
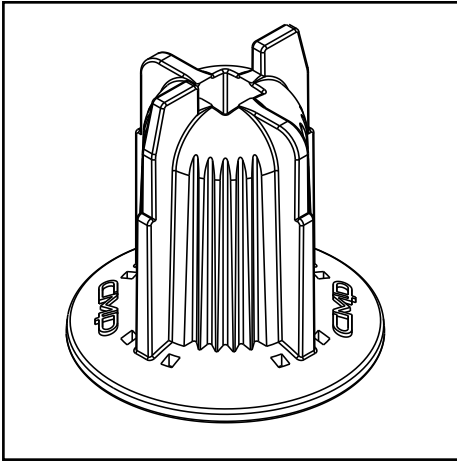
25500-104-007
Brilliant Wonders® 1.5" LED Light
Installation Tool
(Included and Sold Separately)

25503-460-223
Pressure Test/Winter Cap and
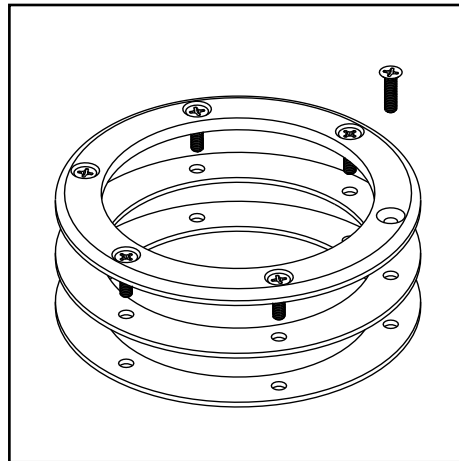O-Ring
(Included and Sold Separately)

25503-469-253
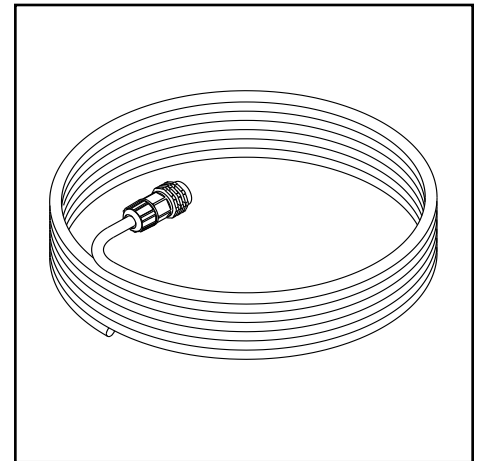Large Lens Kit
(Included and Sold Separately)

25503-460-900	CMP/J Style
25503-460-900H	H-Style
25503-460-900P	P-Style

Brilliant Wonders®
4" LED Bubbler Light Module
(Included and Sold Separately)

25503-300-460	White
25503-301-460	Gray
25503-304-460	Black
25503-309-460	Tan
25503-369-460	Dark Blue

Vinyl Liner Kit
(Sold Separately)

25500-000-025	25 ft
25500-000-050	50 ft
25500-000-100	100 ft
25500-000-150	150 ft

Electric Cable
(Included and Sold Separately)

For the most recent instructions, videos and product information visit www.c-m-p.com/brilliant-wonders-4-led-bubbler