

# BRILLIANT WONDERS® LED CONTROL INSTALLATION INSTRUCTIONS & PRODUCT MANUAL

25650-201-000





C-M-P.COM

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### **ELECTRICAL**

LLLOTRIOAL	
WATTAGE	300 Watt Max
VOLTAGE	120VAC 60HZ
AMPS	2.5A
COMPATIBILITY	- All Brilliant Wonders® LED Lighting products. Waterfalls require Smart Sync adapter.
ADDITIONAL COMPATIBILITY	<ul> <li>UCL LED Lighting from Hayward Industrial Products (not compatible with networked or 4.0 Mode)</li> </ul>
	- LED Lighting from Zodiac International
	- LED Lighting from Pentair Water Pool and Spa, Inc.
INSTALLATION	
ELECTRICAL BOX SIZE	- Single or Double Gang - Min 18in³ Volume - Min 2in Deep
TRANSFORMER	For 12V lighting a transformer is required, For 120V Lights a 1:1 transformer is recommended.
ENCLOSURE	UL Listed for Indoor Use Only unless installed with Type 2 weatherproof outdoor enclosure.

For regularly updated and the most current product information visit CMP online at c-m-p.com.

Brilliant Wonders®, Smart Sync®, Smart Stitch™ are trademarks and/or registered trademarks of CMP.

Hubble® ,Taymac®, Extra Duty® are trademarks of Hubble, Inc.

## IMPORTANT INFORMATION

This installation and user guide contains important information about the installation, operation, and safe use of this product. This guide should be given to the owner and/or operator of this equipment.

#### IMPORTANT SAFFTY INSTRUCTIONS

⚠ DANGER Serious bodily injury or death can result if this product is not installed and used correctly.

**WARNING** Turn off power to controls before installation/service. Failure to comply will either damage or destroy the product and will void the warranty.

### READ AND FOLLOW ALL INSTRUCTIONS

⚠ 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** This product 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 control before servicing.

**MARNING** RISK OF SHOCK OR ELECTROCUTION. Hazardous voltage can shock, burn and cause death or serious property damage.

**MARNING** To reduce the risk of electric shock, the electrical box must be connected to the grounding means provided in the electric supply panel with a conductor equivalent in size to the circuit conductors supplying this equipment.

**△CAUTION** Do not connect two or more Brilliant Wonders LED Controls together.

**NARNING** To reduce the risk of injury, do not permit children to use this product.

## ATTENTION INSTALLER -SAVE THESE INSTRUCTIONS

## INTRODUCTION

The Brilliant Wonders® LED Control offers a dedicated solution for controlling your pool and spa LED lighting from a convenient remote location. The control is designed to install into a standard wall electrical box and is wired to the lighting transformer.

Once installed, the control can be used to fully control your pool and spa lighting. The full color LCD display is used to access all functionality of the control. The advanced digital dial is used to interact with all options on the LCD screen. Turn lights on/off, select and customize light shows and colors, set schedules and lock down the control using the advanced digital dial of the control.

## **SPECIFICATIONS**

#### WHAT'S INCLUDED

- 1 Brilliant Wonders LED Control
- 1 Indoor Wall Plate with Front Finishing Plate
- 2 Wall Plate Screws
- 4 Lever Style Terminal Blocks

#### ELECTRICAL BOX REQUIREMENTS

CSA enclosure type: Type 2, ENCL 2, or equivalent

Indoor electrical box: UL recognized single or multi-gang with minimum 18.0 in<sup>3</sup> volume and 2" deep.

Outdoor electrical box: UL recognized single or multi-gang. (Recommended: Hubble® Taymac® Extra Duty® Non-Metallic While-In-Use Cover)

IMPORTANT: Outdoor enclosure must remain shut.

#### TOTAL ALLOWABLE WATTAGE

Total allowable light wattage for the control is 300 watts. A combination of various LED products can be used but total wattage must not exceed 300 watts.

Refer to your LED lighting's power consumption when determining how many LED products to use with the control.

# IMPORTANT: Add the individual wattage for each LED product and do not exceed 300 total watts.

Examples of possible combinations of CMP Brilliant Wonders® products shown below:

- EXAMPLE 1: Twenty-two 11W 1.5" LED Lights
- EXAMPLE 2: Twelve 11W 1.5" LED Lights,
   Seven LED Laminars and Twelve feet of LED Waterfalls
- EXAMPLE 3: Six 11W 1.5" LED Lights, Three LED Laminars, Three LED Bubblers, Six 4" LED Bubblers and Nine feet of LED Waterfalls
- Use any combination of compatible LED products that does not exceed 300 watts.
   Wattage for other OEM products will vary - refer to manufacturer for details on relevant product wattage.

## INSTALLATION

### **BEFORE YOU BEGIN**

NOTE: The control requires a Neutral connection to operate. If retrofitting into an existing installation, make sure that the electrical box contains a Neutral connection.

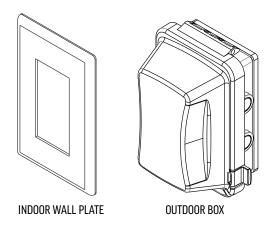
#### MOUNTING LOCATION

The control installs into a standard electrical outlet box. When determining a suitable location, consider that wiring from the control must connect to the primary side of the light's low voltage transformer.

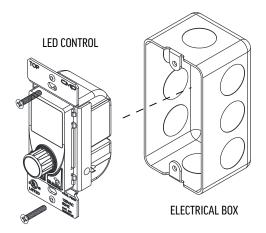
NOTE: The control is designed for indoor use but can be mounted outdoors if a suitable UL rated weatherproof outlet box and cover are used.

For indoor installation the wall plate is included. The wall plate includes a backplate and snap-on front finishing plate. Install backplate with the arrow pointing up using the screws provided. Snap on the front finishing plate with the arrow pointing up. To remove, insert a small screwdriver in the bottom to separate the front from the back.

### INSTALLATION DIAGRAM



Wall plate (included) or a UL rated weatherproof outlet box are required.



#### WIRING

Lever style terminal blocks are included to assist in installation. Move the levers to fully open position when inserting wires. Close the levers to lock wires in place.

All wiring connections should be made directly using the additional lever action terminal blocks. If a ground wire is present connect the control's green wire to ground using supplied lever action terminal block. Once connected, secure the control into the recommended electrical box. Refer to the diagram on the next page for wiring connections

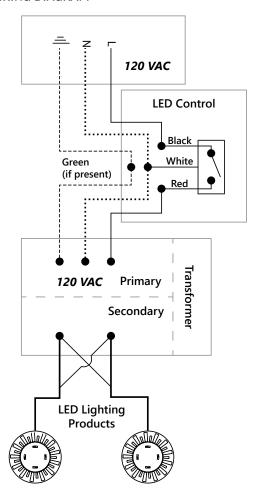
A suitable GFCI protection must be provided.

#### WIRING NOTES

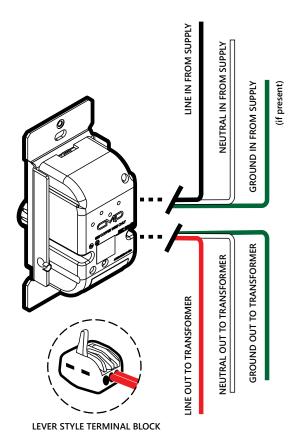
- White Neutral in from supply (required) and Out to transformer
- Red Line out to transformer
- Black Line in from supply
- Green Ground in from supply and out to transformer (Optional: If no green wire is present, leave unconnected and with cap on)

Wiring diagrams on next page

## WIRING DIAGRAM

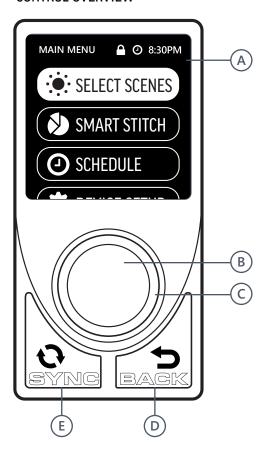


## CONTROL WIRING DETAIL



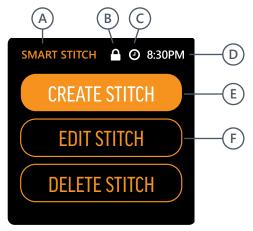
## **GETTING STARTED**

## CONTROL OVERVIEW

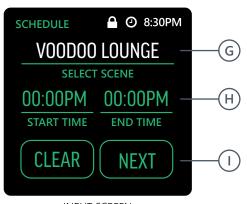


CONTRO	OL LAYOUT OVERVIEW
A	CONTROL LCD DISPLAY  The full color LCD display is used to access all functionality of the LED control. See next page for more info on the display.
В	DIGITAL DIAL  Rotate to move through menus. Press to select.  The advanced Digital Dial is used to interact with all options on the LCD screen.
С	LED COLOR FEEDBACK LED color lights preview the currently selected scene. The LED Color Feedback will display for 10-15 seconds after a scene is selected and then turn off.
D	BACK BUTTON  Press to go back one screen inside the control menus. No effect in top level menus.
E	SYNC BUTTON  Press to automatically synchronize all attached and compatible LED lights.

#### LCD SCREEN OVERVIEW



MENU SCREEN



INPUT SCREEN

MENU	SCREENS
Α	MENU TITLE Displays the name of the current menu
В	LOCK ICON Displayed when the system has an active PIN set. See page 38 for more info on setting a PIN.
с •	SCHEDULE ICON  Displayed when the system has one or more programmed Schedules. See page 35 for more info on setting a Schedule.
D	CLOCK Displays the current programmed time.
E	SELECTED MENU BUTTON  Current menu location is filled with color.
F	INACTIVE MENU BUTTON Inactive menu items are outlined. Rotate the dial to move within a menu.
INPUT	SCREENS
G	SELECTED INPUT FIELD  The selected field / cursor location will flash. Press the dial to activate. Activated field text is white.
Н	INACTIVE INPUT FIELD Inactive fields are color text. Rotate the dial to change field selection.
1	ACTION BUTTONS

Rotate the dial to select a button, and press to take

an action.

## CONTROL FEATURES

#### SELECT SCENES

Your control is pre-programmed with a selection of light shows and colors (Scenes). Available scenes will vary depending on your programming style and attached LED lights. Control manually or set a timer to automatically power down lights.





CONFIRMATION

#### SMART STITCH™

With Smart Stitch, your control can create customized light shows by combining preprogrammed colors and light shows. Get creative and design unique shows for special events or just save your favorites.





#### CREATE SCHEDULE

Set recurring schedules so your lights are always ready when you are. With a schedule, your control will automatically turn lights on and off at your selected times. Choose any Scene to start automatically, and even set multiple schedules.





#### SYSTEM LOCK

Prevent unwanted access to control programming functions with a System PIN Lock. The Select Scene menu can still be accessed when the control is locked.

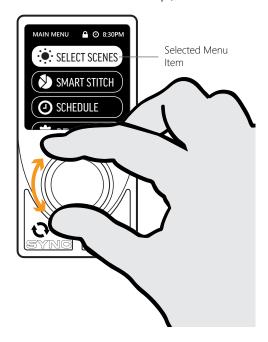




## DIGITAL DIAL OPERATION

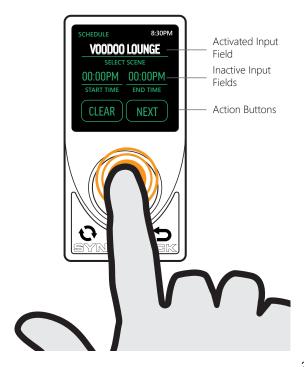
#### TO MOVE ON-SCREEN ACTIVE SELECTION:

Rotate the dial left or right to change the on-screen selection. When an input field is active, rotating the dial will scroll through the available input options. Menus scroll continuously in a loop. (Ex: If you reach the bottom of any menu or screen, the selection will return/roll back to the top.)



#### TO INPUT OR ACTIVATE ON-SCREEN ITEM:

**Press** the digital dial while on a flashing inactive input field to activate the field for input options. Press an Activated Input to confirm a selection. Press an Action Button to advance to the next screen or take an action.



### FIRST TIME START-UP

#### SET UP YOUR LED CONTROL

#### TURN ON THE CONTROL

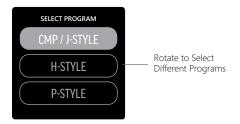
Press and hold the digital dial for about two seconds while controller is OFF to turn ON. Welcome screen is displayed. Press dial to advance.



#### SELECT THE LED PROGRAM STYLE

Your Brilliant Wonders® LED Control can operate lights from major pool lighting manufacturers. Before you start, you must select the LED program style. Rotate the dial to the correct program and press to select.

CAUTION: Please confirm the original manufacturer of your pool lights. Once a program style is selected, the control must be FACTORY RESET to change the programming style.



CMP/ J-Style matches LED Lighting from CMP and Zodiac International H-Style matches UCL LED Lighting from Hayward Industrial Products P-Style matches LED Lighting from Pentair Water Pool and Spa, Inc.

#### SET DATE & TIME

Rotate the dial to select each field. Current location will flash. Press to activate a field location. Activated fields will flash white. Rotate the dial to adjust each time and date field and press the dial to confirm. Select DONE when complete.

The Success confirmation screen will display for two seconds then transition to the Main Menu.



#### START YOUR FIRST LIGHT SHOW

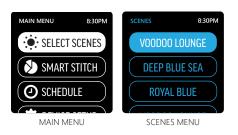
SYNCHRONIZE ATTACHED LIGHTS
Press the SYNC button on the control to
synchronize attached compatible LED lighting.



#### **ACCESS SCENES MENU**

Press the dial to choose SELECT SCENES menu. Rotate dial to your desired LED lighting scene.

Press the dial to make a scene selection.



NOTE: The scenes listed in the menu will be different depending on the LED program style you selected during setup.

#### **ACTIVATE LIGHTING SCENE**

After you make a selection the scene confirmation screen is displayed. Press to select start and activate the lighting scene. The Success confirmation screen will be displayed for two seconds, and then return to the Main Menu.





CONFIRMATION SUCCESS SCRE

## SELECT SCENES MENU

#### VIEWING AND SELECTING SCENES

To access the Scenes Menu choose SELECT SCENES from the main menu.





SCENES MENU

#### SCENES MENU

Lighting Scenes can include solid colors, color changing shows, and saved Smart Stitch programs. Available Scenes will vary depending on the program style selected during device startup. P-Style programming also includes special HOLD and RECALL options.

#### STARTING A SCENE

Rotate the dial to scroll through available Scenes. When you locate your desired Scene, press the digital dial to select. The next screen lets you confirm the Scene selection. The default option when you select a Scene is to START. Select START to switch to the scene immediately. The lighting scene will stay on

continuously unless manually changed, turned off or modified by another programmed schedule.





CONFIRMATION

SETTING A SCENE TIMER

You also have the option to start a Scene on a timer. Select TIMER to automatically power down the lights after a set duration. Use the digital dial to select and set hours and minutes. Fields set as "HH" or "MM" will default to "00." Select START and press the dial to activate the timer or press CLEAR to reset and start over.

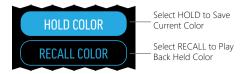


Set a Scene Timer to Shut Down Lights Automatically

### SPECIAL P-STYLE FUNCTIONS

When the LED Control is set for P-Style

systems, additional functions of HOLD and RECALL are added to the SELECT SCENE menu.



#### **HOLD A COLOR**

While any Scene is active, press HOLD COLOR to capture to store the current color of the pool lights. An on-screen confirmation will display for two seconds when the color is saved, then return to the Main Menu. The preview LED is disabled for color Hold.

Only one stored color will be saved at a time. Pressing HOLD on a new color will clear the previously saved color.

#### RECALL A COLOR

Press RECALL COLOR to activate the previously held light color. An on screen confirmation will display for two seconds when the color is activated, then returns to the Main Menu. The preview LED is disabled for color Recall.

#### PROGRAM STYLE SCENES LIST

#### CMP/J-STYLE - 9 COLORS & 5 SHOWS

- 1. Alpine White (white)
- 2. Sky Blue (primary blue)
- 3. Cobalt Blue (dark blue)
- 4. Caribbean Blue (light blue)
- 5. Spring Green (light green)
- 6. Emerald Green (primary green)
- 7. Emerald Rose (warm yellow)
- 8. Magenta
- 9 Violet
- 10. Slow Color Splash (slow fading color show)
- 11. Fast Color Splash (fast fading color show)
- 12. America the Beautiful (red/white/blue show)
- 13. Fat Tuesday (blue/pink/light green show)
- 14. Disco Tech (rapid exciting color show)

#### H-STYLE - 10 COLORS & 7 SHOWS

- 1. Voodoo Lounge (fast fading color show)
- 2. Deep Blue Sea (dark purple/blue)
- 3. Royal Blue
- 4. Afternoon Skies (light blue)
- 5. Aqua Green
- 6. Emerald (green)
- 7. Cloud White (white)
- 8. Warm Red
- 9. Flamingo (pink)
- 10. Vivid Violet
- 11. Sangria (purple)

- 12. Twilight (slow fading color show)
- 13. Tranquility (blue tones show)
- 14. Gemstone (green/blue/red show)
- 15. USA (red/white/blue show)
- 16. Mardi Gras (purple/orange/green show)
- 17. Cool Cabaret (medium fading color show)

#### P-STYLE - 5 COLORS & 7 SHOWS

- HOLD
- 2. RECALL
- 3. SAm® Mode (blue/magenta/white/green show)
- 4. Party Mode (fast fading color show)
- 5. Romance Mode (medium fading color show)
- 6. Caribbean Mode (green/white/blue show)
- 7. American Mode (red/white/blue show)
- 8. California Sunset Mode (warm tone color show)
- 9. Royal Mode (purple/orange/green show)
- 10. Blue
- 11. Green
- 12. Red
- 13. White
- 14. Magenta

SAm® is a registered trademark of Pentair Water Pool and Spa, Inc.

## SMART STITCH<sup>™</sup> MENU

#### MANAGING SMART STITCH PROGRAMS

To access the Smart Stitch Menu choose SMART STITCH from the main menu. *NOTE:* The Smart Stitch menu can be locked by a PIN.





MAIN MENU

SMART STITCH MENU

With Smart Stitch, your control can create customized light shows by combining or "stitching" together pre-programmed colors and light shows. Saved Stitch programs are located in the Select Scenes menu in the same list as pre-programmed scenes.

In the Smart Stitch Menu, you can Create, Edit and Delete Smart Stitch Programs.

#### CREATE A NEW SMART STITCH

To begin, select Create Stitch in the Smart Stitch Menu. The next screen is the Stitch Creation Screen. A Smart Stitch is made of

multiple Scenes that are "stitched" together. For each part of a Stitch you can control the Scene and it's duration

CREATING A SMART STITCH SEGMENT Press the dial to activate the "select scene" input field. Rotate the dial to select a Scene and press to confirm.

Continue using the digital dial to adjust the duration for the first scene. The minimum length is one minute.



ADDING ADDITIONAL STITCH SEGMENTS Once complete, select NEXT to proceed. This will open a new Stitch Creation Screen. Repeat steps to continue adding new segments. Select DONE when you are finished adding all Smart Stitch segments. This will open the Confirmation Screen.

PLEASE NOTE: The maximum length of a Smart Stitch program is 24 hours or ten total Stitch segments.

# SAVING A NEW SMART STITCH Review the confirmation screen before saving. Press DONE to save your custom Stitch or

Press DONE to save your custom Stitch o press RENAME to give it a custom name.

To Rename, use the dial to spell out your custom name and select DONE when complete. To access your new Smart Stitch, use the Select Scenes menu. Custom Smart Stitch programs will appear above preprogrammed Scenes in the Scenes Menu.



Use the Digital Dial to Create A Custom Name

#### EDIT OR DELETE AN EXISTING SMART STITCH

A Stitch can be edited or deleted after it is created. To begin, Select Edit Stitch or Delete Stitch in the Smart Stitch Menu.



#### **EDITING A SAVED SMART STITCH**

Editing a Stitch uses the same Stitch Creation Screen as creating a new Smart Stitch. Use the digital dial to make changes to the scene and duration. When your changes are complete select NEXT to move on the next segment of the Smart Stitch program.

You can edit each segment of a saved Stitch. The minimum length is one minute. Segments cannot be removed when editing. Select DONE when edits are complete.

#### DELETING A SAVED SMART STITCH

Use the Delete Stitch menu to remove a Smart Stitch. Select the custom Stitch you would like to remove using the dial, and confirm on the Delete screen.



## SCHEDULES MENU

#### MANAGING SCHEDULES

To access the Schedule Menu choose SCHEDULE from the main menu. *NOTE: The Schedule menu can be locked by a PIN.* 





MAIN MENU

SCHEDULES MENU

With a schedule, your control will automatically turn lights on and off at your selected times. Choose any Scene or saved Smart Stitch to start automatically, and set multiple schedules.

In the Schedule Menu, you can Create, Edit and Delete Schedules. When there are Schedules programmed the ② icon will appear at the top of the screen.

#### CREATE A NEW SCHEDULE

To begin, select Create Schedule in the Schedule Menu. To create a schedule you will select a scene, start/end times and frequency. Schedules can repeat daily or on certain selected days.

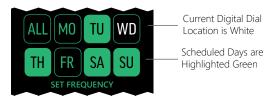
#### SET SCENE AND TIMING

Press the dial to activate the "select scene" input field. Rotate the dial to select a Scene and press to confirm. You can choose from any pre-programmed Scene or saved Smart Stitch. Use dial to adjust start time and end time. You must set Hours and Minutes to continue. Press NEXT to proceed.



#### SET SCENE FREQUENCY

Use the digital dial to select the days you would like the Schedule to be active. You can choose from any combination of days or select ALL to set the Schedule for every day of the week.



#### SAVING A NEW SCHEDULE

Review the confirmation page before saving. Press DONE to save your custom Schedule or

press RENAME to give it a custom name.



Create a Custom Name for Schedules

#### EDIT OR DELETE AN EXISTING SCHEDULE

A Schedule can be edited or deleted after it is created. To begin, select Edit Schedule or Delete Schedule in the Schedule Menu.



#### **EDITING A SAVED SCHEDULE**

Editing a Schedule uses the same Schedule Creation Screen as creating a new Schedule. Use the digital dial to make changes to the Scene, start/end times and frequency. When your changes are complete select DONE.

#### **DELETING A SAVED SCHEDULE**

Use the Delete Schedule menu to remove a saved Schedule. Select the Schedule you would like to remove using the digital dial, and confirm on the Delete screen.

### **DEVICE SETUP**

You can use the Device Setup Menu to adjust certain system-wide control settings.





MAIN MENU

DEVICE SETUP MENU

#### SET CLOCK

Use the Set Clock to adjust date and time settings. In the event of a power outage, the Set Clock screen will automatically come up after system start up.

## TECH HELP & INFO

Quick access to CMP Technical Support contact information.

#### SYSTEM LOCK

Your control is equipped with an option to set a System Lock. If a Lock PIN is created, the PIN will be required to access the Smart Stitch Menu, Schedules Menu and System Reset. The Scenes Menu is still accessible without entering the PIN when the system is locked. If a Lock PIN is set, the  $\triangle$  icon will be displayed at the top of the screen.

To lock control settings, select Create Lock PIN. You will be required to enter the new four digit PIN twice to confirm.





SYSTEM LOCK MENU

PIN CREATION

To edit the PIN select Edit Lock PIN. To unlock the system, select Unlock Settings and enter the Lock PIN.

If you forget or misplace your Lock PIN, you can use the PIN Lock Override to unlock the control. See Troubleshooting for more information.

#### SETTINGS RESET

Use the Settings Reset to clear all saved Stitch Programs and Schedules. This will not clear the system program settings, clock or Lock PIN.

#### **FACTORY RESET**

Use the Factory Reset to restore your control to original factory system settings. This will clear all saved data. On restart you will be required to select the LED program style and set the clock.

NOTE: A Factory Reset is the only way to change the LED program style.

## TROUBLESHOOTING & FAQ

## After a Power failure, do I need to reset all the data on the control?

No. Only date and time needs to be set. The built-in control memory will remember settings including saved Smart Stitch programs, Schedules and Security PIN.

## I selected a Scene but pool lights show a different color.

- Option 1: Press the Sync button to synchronize lights.
- Option 2: The incorrect program style was selected at start-up. Follow the Factory Reset instructions and select the proper style.
- Note: For color changing shows the Digital Dial will preview the Scene but does not "sync" with the pool lights.

## Pool lights do not match; how do I make all the lights to same color?

Press the Sync button on the control. This will synchronize all compatible attached lights. Note: some program styles may take up to 45 seconds to complete the re-sync process.

#### I forgot my security Lock PIN.

Press and hold the Digital Dial, Sync Button and Back Button simultaneously for 10

seconds. When you receive a "System Unlocked" confirmation the control will be unlocked

## The screen does not come on/control does not operate.

- Option 1: Check that the control is properly connected to the main power.
- Option 2: Turn off and back on by pressing the Digital Dial for two seconds. Upon Power cycle the Dial preview will glow for two seconds if the control is powered. If the Digital Dial does not light or the screen does not activate contact customer support.

#### Can the control be installed outdoors?

For outdoor installation the control must be mounted in a suitable UL rated weatherproof outlet box and cover

## Can I connect a 120V light directly to the control?

We recommend connecting via 1:1 transformer

## The control is on and operating but my pool lights do not turn on.

Contact your pool builder for assistance. Possible causes of failure are light failure, transformer failure or wiring failure.

## Can the Brilliant Wonders LED control operate multiple "zones?"

No. To control multiple areas independently you must use multiple controls.

## Can the control's preview LED be manually disabled?

No. However the preview LED will be automatically disabled when using P-Style Hold and Recall functions.

## How many lights can be connected to one control?

Any combination of compatible LED lights can be connected as long as the total power requirements do not exceed 300 total watts.

For further techincal support assistance contact your builder, visit www.c-m-p.com or call 1-800-733-9060.





Covered by one or more U.S. patents or pending patent applications. See www.c-m-p.com/patents for details.

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