



# **mazarra** LED Lighting System

## **P-Series Owner's Manual**

Innovative, efficient and versatile.

Before using this Maxspect™ Mazarra LED Lighting System please read these operating instructions carefully. Take special care to follow the safety suggestions listed below.

Afterwards keep this manual handy for future reference.

### Before using the Maxspect™ Mazarra LED Lighting System

1. Remove any protective film covering the lens of the LED bulbs before use.
2. Never look directly at the LED bulbs when you switch on the system. Incorrect use of this apparatus will increase eye hazard.

### On Safety

1. **Power Source** – Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
2. **Power Cord Protection** – The power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Never take hold of the plug or cord if your hand is wet, and always grasp the plug body when connecting or disconnecting it.
3. **Installation** – Install indoor only, and use the attachments, mounting frames, hanging kit and accessories provided and specified by the manufacturer.










### On Operation

1. **Operation** – Always follow the operation instructions set forth in this manual when using this Mazarra LED Lighting System.
2. **Heat** – The apparatus should be situated away from heat sources such as radiators, and do not expose to excessive heat such as sunshine, fire or the like.
3. **Moisture** – To reduce the risk of fire or electric shock, do not expose this apparatus to rain, moisture, dripping or splashing.
4. **Ventilation** – The apparatus should be situated so that its location or position does not interfere with its proper ventilation.
5. **Magnetism** – The apparatus should be situated away from equipment or devices that generate strong magnetism.
6. **Cleaning** – Clean only with dry cloth.






# Index to Parts and Controls

## Controller Unit



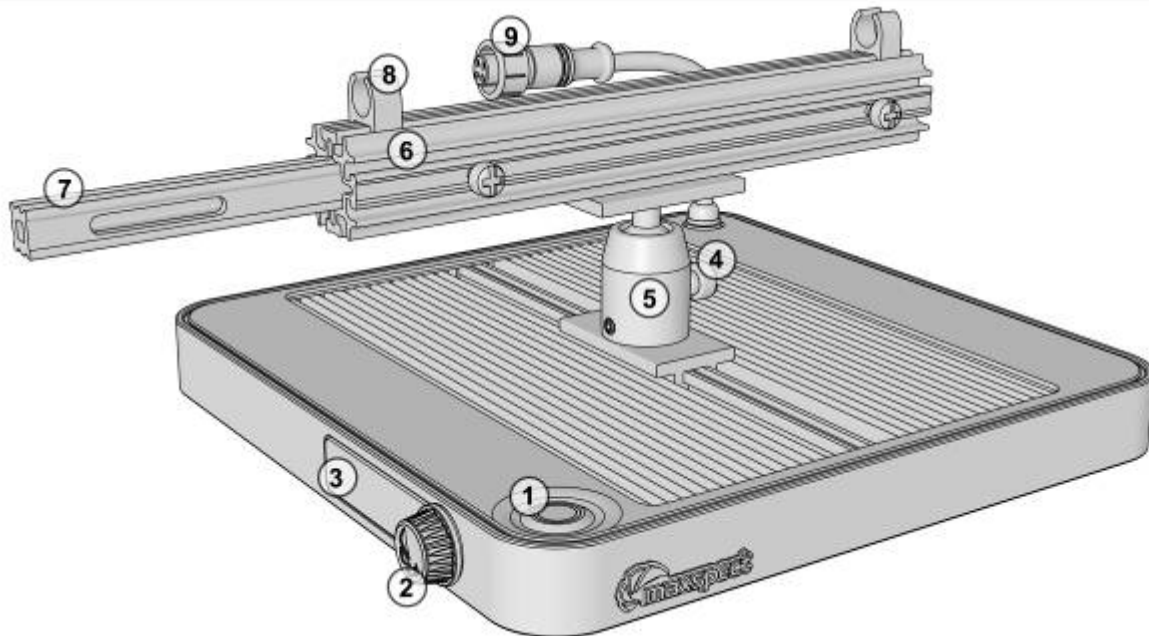
- |   |   |    |  |
|---|---|----|--|
| 1 | LCD Panel   | 7  |  Backlight Button    |
| 2 |  Manual Mode     | 8  |  Exit Button        |
| 3 |  Automatic Mode  | 9  |  Control Dial       |
| 4 |  Setup Mode      | 10 |  Mode Switch Button |
| 5 |  Connection Mode | 11 |  Confirm Button     |
| 6 | Status Indicators   | 12 | Connected LED Modules Indicators   |



The following **Status Indicators** will flash when the controller enters the corresponding settings mode, and will remain lit when the corresponding mode is activated.

- |   |   |
|---|---|
| 1 |  Wireless Connection |
| 2 |  Manual Mode         |
| 3 |  Automatic Mode      |
| 4 |  Dawn/Dusk Mode      |
| 5 |  Weather Mode        |

## Index to Parts and Controls

### LED Module



- 1  Select Button
- 2  Control Dial
- 3 LCD Display
- 4 Thumb Screw
- 5 Ball Joint Mount

- 6 Rail System
- 7 Rail Connector
- 8 Cable Organizer
- 9 Power Supply Cable

## Powering the Mazarra LED Lighting System



A sample connection configuration utilizing 2 LED Modules

1. Each Power Supply can power up to 2 LED Modules and 1 Controller Unit.
2. For additional LED Modules, you must connect more Power Supplies.

**WARNING:** Use only Maxspect™ Mazarra P-Series Power Supply for P-Series LED Modules. Do not connect more more than 2 LED Modules to one Power Supply as doing so may cause damage to the Power Supply!!

## Optics

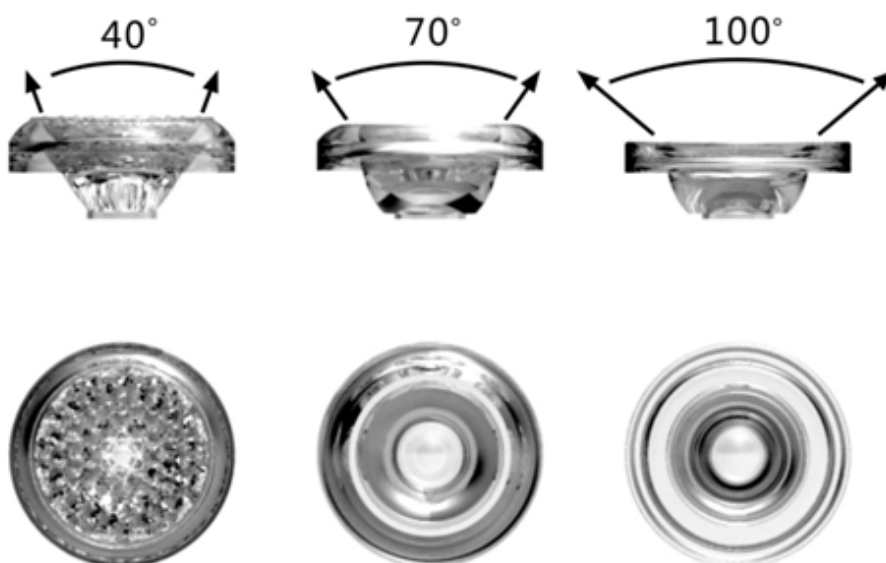
Each Mazarra LED Module comes with three sets of optics, ranges from 100°, 70° to 40° (factory default is 70°). Installing optics will enhance penetration of light over a greater depth of water by converging light from the LED bulbs, but at the same time reducing the coverage area.

By mix-and-matching different types of optics to be installed, you would be able to customize the overall appearance and performance of your Mazarra LED Lighting System.

### Note

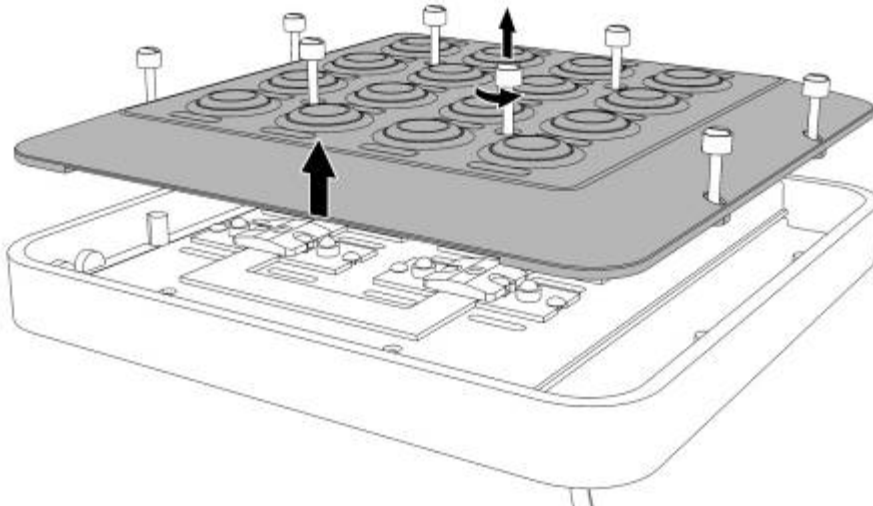
You must install one of the three types of optics on every bulb. The optics also serves as a protective barrier that prevents water and moisture from damaging the LED bulbs.

**WARNING:** Installing the 40° optics will converge light into a narrow beam, incorrect usage of optics may result in bleaching of your corals from over-exposure to high intensity light.

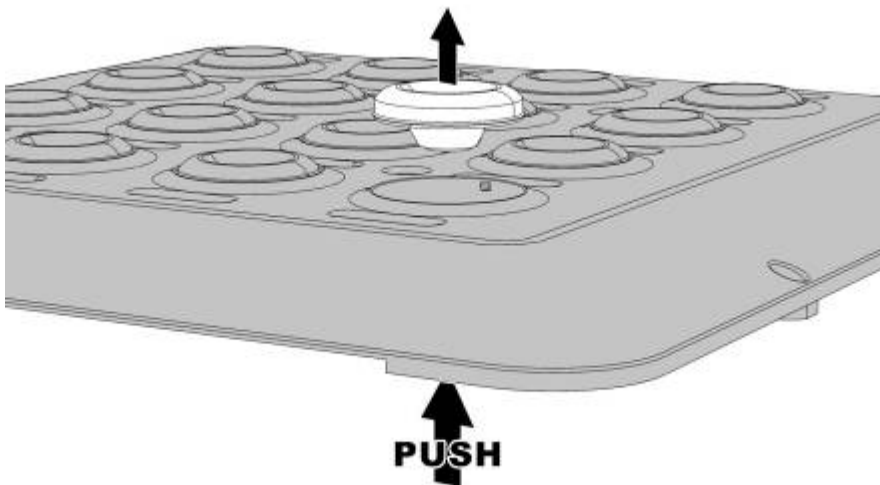


## Installing / Changing Optics

1. Using a small slotted screwdriver, carefully remove the screws on the bottom panel and remove it.



2. Push the optics out of the bottom panel.

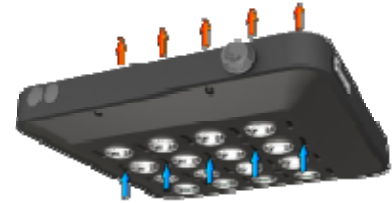


3. Place the new optics over the slot and apply pressure on it until you hear it snaps.



## Passive / Active Cooling

With the new Cree XLamp® XM-L chip, higher efficiency means less power is consumed and the Mazarra runs cooler than its predecessors. Together with an ingenious aerodynamic design, the Mazarra is passively cooled when warm air passes through its aluminum chassis.



Nonetheless, in the situation where you do need to actively cool your LED Module, for example, your Mazarra is installed in a confined space such as a canopy, you can install the optional fan by following the below instructions.

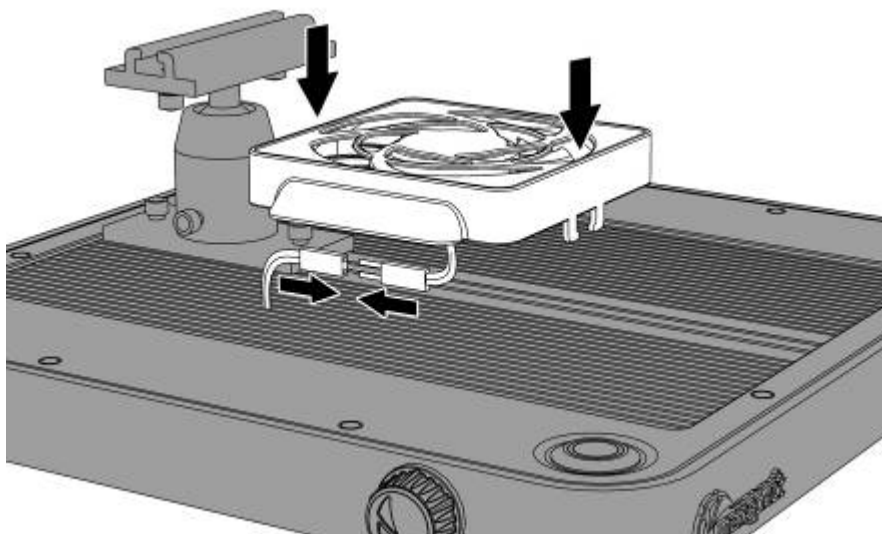


### Note

The fan is temperature controlled, it will only turn on when the temperature rises above a preset value (see Operating Instructions on the LED Module and Controller Unit). Installing the optional fan will ensure the module runs at optimal temperature and prolong the lifespan of LED Bulbs.

## Installing the Optional Fan

1. Insert the fan onto the slot as indicated by the diagram below, and connect the power cable.





### Changing / Replacing LED Bulbs

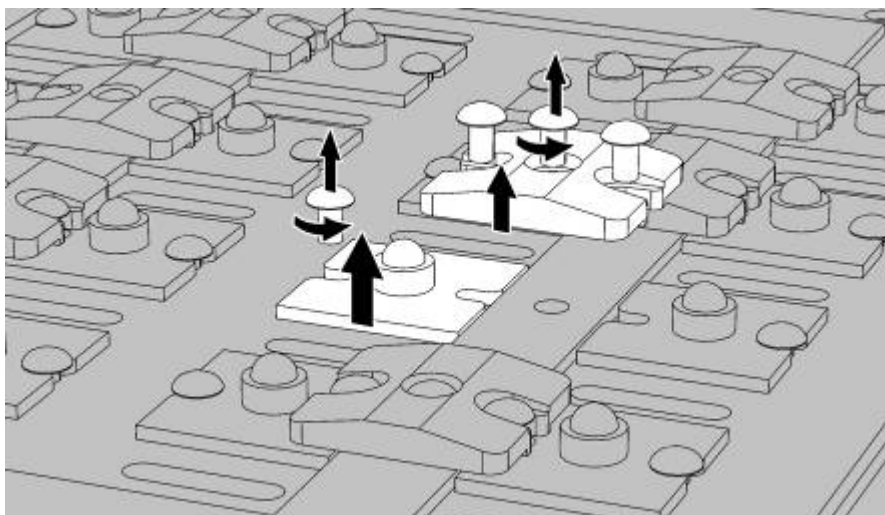
The Mazarra is the only LED Lighting System available on the market that offers both plug-and-play LED bulb replacement design and LED bulbs covering the entire color spectrum, allowing maximum customization and flexibility.

By mix-and-matching colored LED bulbs, Mazarra allows you to pick the right color spectrum for your aquarium, and bring out that color from your corals exactly like you have always dreamed of.

**WARNING:** Install only Maxspect™ LED Bulbs onto Mazarra LED Modules. Installing unauthorized or aftermarket LED Bulbs onto Mazarra LED Modules will void your warranty!!

**WARNING:** Prior to installing LED Bulbs, you must ensure you are using the correct wattage and driving current for the LED Bulb. Using a wrong wattage and/or driving current could shorten the lifespan of bulb or even damage it!!

1. **Open the LED Module the same way as you would replace Optics.**  
Please refer to "Installing / Changing Optics" section for detail instructions.
2. **Carefully loosen and remove the screws, then lift the clasp holding the LED Bulb chip to replace it.**



3. **When finished, return the clasp to its original position and tighten the screws.**

# Operating Instructions

## The LED Module



Follow the instructions below to operate and program the LED Module.

### Note

The LED Module turns on automatically when power is connected, and turns off when power is cut.

When power is resumed, the LED Module will restore to the previous saved setting automatically, whether it was last set at Standalone Mode or Connected Mode, and the intensity level of all the LED channels.

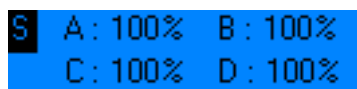
## Switching between Standalone and Connected Mode

1. Press and **hold**  **Select Button** for 2 seconds to switch between **Standalone Mode** and **Connected Mode**.
2. Press  **Control Dial** to turn on the backlight on the **LCD Display**.

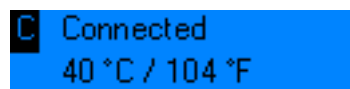
The backlight will turn off automatically after 30 seconds of idling.

## LED Module Status

1. Intensity of the 4 LED channels, temperature of the LED Module and status of the fan will be shown on the **LCD Display**.
2. The status of the LED Module will rotate every 5 seconds.



S A : 100% B : 100%  
C : 100% D : 100%





C Connected  
40 °C / 104 °F

# Operating Instructions


## LED Module – Standalone Mode


You may only need to enter Standalone Mode if you're using the P-Series Mazarra without a Controller Unit. In Standalone Mode, you can adjust the intensity of the 4 LED channels and Active Cooling setting directly from the LED Module.

### Turning on the LED Channels





1. Press  **Select Button** to turn on all 4 LED channels simultaneously.
2. Press  **Select Button** the button again to turn them off.

### Control the LED Module in Standalone Mode

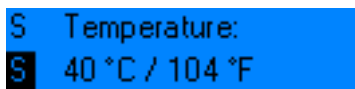
1. Press and **hold**  **Control Dial** for 3 seconds to enter setup. Channel A will be selected first.



S A: 100% B: 100%  
S C: 100% D: 100%

2. To adjust brightness of the selected channel, rotate  **Control Dial**.  
Rotate clockwise will increase the brightness and vice versa.
3. Press  **Control Dial** to switch to the next LED channel. Repeat #2 for channel B, C and D.
4. Press  **Control Dial** again to adjust the Active Cooling setting.
5. To adjust the temperature, rotate  **Control Dial**.

There are 5 settings: 40°C/104°F, 45°C/113°F, 50°C/122°F, 55°C/131°F and 60°C/140°F.



S Temperature:  
S 40 °C / 104 °F

6. When finished, press and **hold**  **Control Dial** to save the setting.

The setting is now saved. The setting will also be saved after idling for 30 seconds.

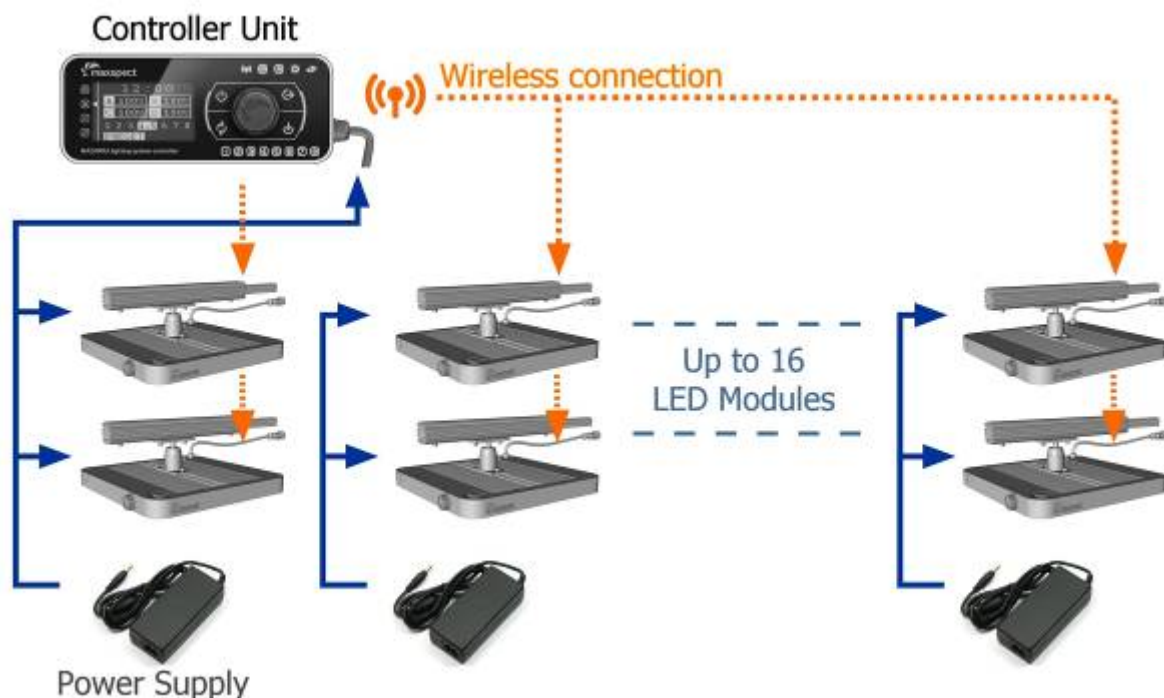
# Operating Instructions

## LED Module – Connected Mode

In Connected Mode, the Controller Unit will take command over the LED Modules. However you must first connect the LED Modules to the Controller Unit.

## Connecting LED Modules to the Controller Unit

See the connection diagrams below, and read the additional information to properly connect the Mazarra LED Lighting System.



A sample connection configuration utilizing 1 Controller Unit.

- 1. Each Controller Unit can connect up to 16 LED Modules through wireless connection.**




If you have more than 16 LED Modules, you must use another Controller Unit.

- 2. There is a maximum of 16 wireless frequencies.**

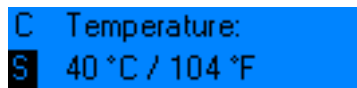
Therefore you can install up to a maximum of 16 Controller Units in 10 meters (33 feet) radius. Please refer to "Adjusting Wireless Frequency Channel" section for detail instructions.

## Operating Instructions

### Adjusting Active Cooling Setting

1. Active Cooling means the minimum temperature the LED Module must reach before the fan will be turned on automatically.
2. Press and **hold**  **Control Dial** for 3 seconds to enter setup.
3. Press  **Control Dial** twice to select the Active Cooling setting screen.
4. To adjust the temperature, rotate  **Control Dial**.

There are 5 temperature settings: 40°C/104°F, 45°C/113°F, 50°C/122°F, 55°C/131°F and 60°C/140°F.



C Temperature:  
S 40 °C / 104 °F

5. When finished, press and **hold**  **Control Dial** to save the setting.

The setting is now saved. The setting will also be saved after idling for 30 seconds.

# Operating Instructions

## The Controller Unit

Follow the instructions below to operate and program the Controller Unit.

### Turning on the Controller Unit

1. **The Controller Unit turns on automatically when power is connected, and turns off when power is cut.**

The Controller will remember its previous setting, whether it was last set at Manual Mode or Automatic Mode.

2. Press  **Backlight Button** on the Controller Unit.

The LCD Panel backlight turns on, and will turn off automatically after 30 seconds of idling. The backlight will remain lit when the Controller Unit is in the Setup Mode or Connection Mode.

### Entering and leaving Setup Mode

You will need to enter Setup Mode to adjust settings and setup programs.

1. Press  **Mode Switch Button** on the Controller to enter Selection Mode.

The arrow displayed on the LCD Panel will now flash.

2. Rotate  **Control Dial** clockwise to select  **Setup Mode**.

3. Press  **Confirm Button** to enter  **Setup Mode**.

You are now in the Setup Mode.



4. When finished, press  **Exit Button** to return to Main Menu.

The Controller Unit will also return to Main Menu after idling for 10 seconds.

# Operating Instructions

## Setting the Clock

This Mazarra LED Lighting System incorporates a 24-hour clock. The clock must be set for the Automatic Mode programs to operate correctly.



1. Enter  **Setup Mode**.

Please refer to "Entering and leaving Setup Mode" section.

2. Rotate  **Control Dial** to select **TIME** and press  **Control Dial**.

You can now set the clock.



3. Rotate  **Control Dial** to change the hour digit, press  **Control Dial** to confirm, repeat for the minute digit.

The clock is now set.

4. Press  **Exit Button** to return to  **Setup Mode**.

The Controller Unit will also return to Setup Mode after idling for 30 seconds.



# Operating Instructions

## Setting up Wireless Connection

You must establish the wireless connection between the Controller Unit with all LED Modules before you can setup any programs with the Controller Unit.

1. Activate **Automatic Mode** on all the LED Modules to be connected to the Controller Unit.


Please refer to the "Switching between Manual and Automatic Mode" section.

2. Press  **Mode Switch Button** on the Controller to enter Selection Mode.  
The arrow displayed on the LCD Panel will now flash.

3. Rotate  **Control Dial** clockwise to select  **Connection Mode**.

4. Press  **Confirm Button** to enter  **Connection Mode**.

You are now in the Connection Mode.

5. Rotate  **Control Dial** clockwise to select **Wireless Frequency Channel**.

Please refer to "Adjusting Wireless Frequency Channel" section.




6. Press  **Control Dial** to confirm the **Wireless Frequency Channel**.

The cursor will now move to the START box.

7. Press  **Confirm Button** to initiate the connection.

The LED Modules will now attempt to connect to the Controller Unit.

8. The  **Wireless Connection Status Indicator** will now blink rapidly.

9. Upon successful connection,  **Select Button** on the LED Modules will blink slowly and the corresponding number will appear on display.

The LED Modules and the Controller Unit are now paired.

10. Once paired,  **Control Dial** on all LED Modules will no longer function.

All functionalities and settings will be controlled and programmed through the Controller Unit.








11. When finished, press  **Exit Button** to return to Main Menu.





The Controller Unit will also return to Main Menu after idling for 10 seconds.




# Operating Instructions

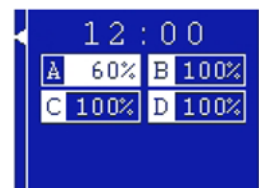
## Controller Function – Manual Mode

There are a total of 4 LED channels on each connected LED Module, the Controller Unit allows you to manually turn them on, off and adjust their brightness.

1. Press  **Mode Switch Button** on the Controller to enter Selection Mode.  
The arrow displayed on the LCD Panel will now flash.
2. Rotate  **Control Dial** clockwise to select  **Manual Mode**.
3. Press  **Confirm Button** to enter  **Manual Mode**.  
You are now in the Manual Mode.
4. Press and **hold**  **Control Dial** for 3 seconds to modify the settings.
5. The  **Manual Mode Status Indicator** will now blink.
6. Press the following buttons to turn on or turn off the corresponding LED channel.

 <b>Backlight Button</b>	Channel A	 <b>Exit Button</b>	Channel B
 <b>Mode Switch Button</b>	Channel C	 <b>Confirm Button</b>	Channel D

7. To adjust brightness of the selected channel, rotate  **Control Dial**.  
Rotate clockwise will increase the brightness and vice versa.
8. Press  **Control Dial** to advance to the next LED channel, and repeat #6 until the desired brightness of all 4 LED channels is set.
9. Press and **hold**  **Control Dial** for 3 seconds to confirm settings.  
The settings are now saved. The settings will also be saved if the Controller Unit was left idle for 30 seconds.



# Operating Instructions

## Controller Function – Automatic Mode

The Controller Unit can be setup to automatically run programs to control photoperiod and brightness of the system throughout the entire day.


1. Press  **Mode Switch Button** on the Controller to enter Selection Mode.

The arrow displayed on the LCD Panel will now flash.

2. Rotate  **Control Dial** clockwise to select  **Automatic Mode**.

3. Press  **Confirm Button** to enter  **Automatic Mode**.

You are now in the Automatic Mode.

4. Press  **Mode Switch Button** to switch between Preset, Program 1 (P1) and Program 2 (P2).

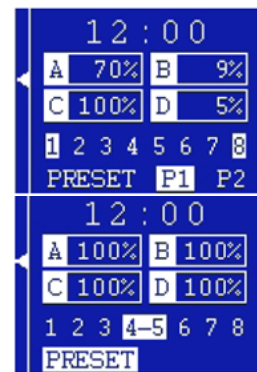
To setup Program 1 and 2, please refer to "Setting up User-Defined Programs" section.

5. Press and **hold**  **Control Dial** for 3 seconds to modify the settings.

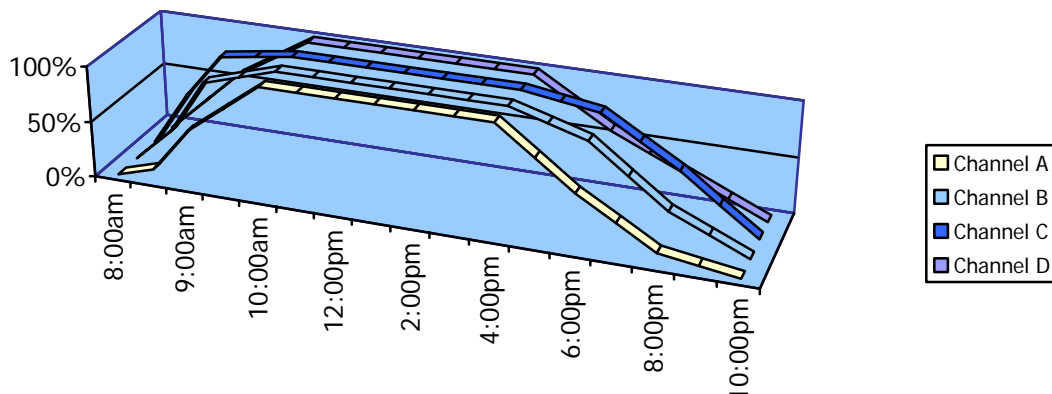
6. The  **Automatic Mode Status Indicator** will now blink.

7. Press and **hold**  **Control Dial** for 3 seconds to confirm settings.

The settings are now saved. The settings will also be saved if the Controller Unit was left idle for 30 seconds.



The Preset photoperiod program cannot be changed and will automatically control the brightness of the system following the pattern demonstrated in the diagram below.



# Operating Instructions

## Controller Function – Photoperiod Programs

The Controller Unit can be programmed to control the photoperiod and brightness of the system throughout the day. There are a total of 2 user-definable programs that can be stored in the system.

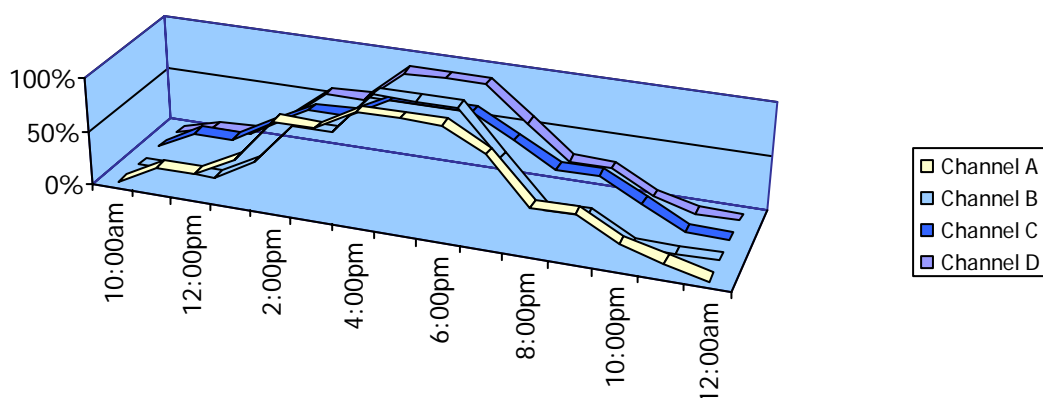
### Understanding Time Points

There are a total of 8 Time Points for each program. You can program different luminous output intensity at each Time Point to control the photoperiod and brightness of the system.

For example, the following table demonstrates how you could program the Time Points such that the system would increase light gradually from 10:00am, peaks at 4:00pm then slowly decreases light until it is turned off at 11:00pm.

	TP1 11:00	TP2 13:00	TP3 14:00	TP4 16:00	TP5 19:00	TP6 20:00	TP7 22:00	TP8 23:00
Channel A	20%	40%	80%	100%	80%	40%	20%	1%
Channel B	OFF	20%	60%	100%	60%	20%	OFF	OFF
Channel C	20%	40%	60%	80%	60%	40%	20%	1%
Channel D	10%	30%	60%	90%	60%	30%	10%	OFF

The following diagram would illustrate how the 4 LED channels would behave once the above Time Points have been programmed.





### Programming Time Points

1. Enter  **Setup Mode.**

Please refer to "Entering and leaving Setup Mode" section

## Operating Instructions

2. Rotate  **Control Dial** to select PROGRAM 1 and press  **Control Dial**.

You can now setup Program 1.



3. Press  **Mode Switch Button** to switch between the 8 Time Points.



4. Rotate  **Control Dial** to select ON/OFF.

This will activate or deactivate this Time Point. When a Time Point has been deactivated, the settings associated with this Time Point will be ignored, but not deleted. You could use this feature to quickly alter your photoperiod without having to reprogram the settings.

5. Press  **Control Dial** to switch to the timer, rotate  **Control Dial** to change it.

The timer will increment/decrement in 30-minutes intervals. Note: Changes you made to a Time Point will affect all subsequent Time Points to prevent erroneous behavior. For example, if you change the timer to a larger value than the next Time Point, the system will push the next Time Point to the same time, with a maximum value of 23:30.

6. Press  **Control Dial** to switch to Channel A.

7. Rotate  **Control Dial** to adjust brightness for this channel then press  **Control Dial** to switch to the next channel.

Repeat #6 and #7 for all 4 channels. Note: At 0% intensity the channel is turned OFF.

8. Repeat #3 to #8 for all 8 Time Points.

9. Press  **Exit Button** to confirm and return to **Setup Mode**.

The settings are now saved. The settings will also be saved if the Controller Unit was left idle for 30 seconds.

10. To setup PROGRAM 2, perform #2 but select PROGRAM 2, then repeat the above steps.

## Controller Function – Setting up Moon Light

Moon-Light can be programmed into Program 1 or 2 by simply assign one or more of the LED channels (preferably the blue LED channel) to operate at 1% brightness in the last Time Point.

## Limited Warranty

Maxspect Ltd. warrants all Maxspect™ Mazarra LED Lighting System products against defects in workmanship for a period of 12-months from the date of purchase. If a defect exists during the warranty period, Maxspect Ltd. at its option will either repair (using new or remanufactured parts) or replace (with a new or remanufactured unit) the product at no charge.

THE WARRANTY WILL NOT APPLY TO THE PRODUCT IF IT HAS BEEN DAMAGED BY MISUSE, ALTERATION, ACCIDENT, IMPROPER HANDLING OR OPERATION, OR IF UNAUTHORIZED REPAIRS ARE ATTEMPTED OR MADE. SOME EXAMPLES OF DAMAGES NOT COVERED BY WARRANTY INCLUDE, BUT ARE NOT LIMITED TO, USING AFTER-MARKET LED BULBS AND MODIFICATION OF THE CIRCUITRY, WHICH ARE PRESUMED TO BE DAMAGES RESULTING FROM MISUSE OR ABUSE.

### **DISCLAIMER OF CONSEQUENTIAL AND INCIDENTAL DAMAGES:**

You and any other user of Maxspect Ltd. products shall not be entitled to any consequential or incidental damages, including without limitation, loss of use of the unit, inconvenience, damage to personal property, phone calls, lost income or earnings. This warranty gives you specific legal rights and you may also have other rights, which vary from state to state.

MAXSPECT LTD. MAKES NO WARRANTY OR REPRESENTATION, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE PRODUCT'S QUALITY, PERFORMANCE, MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE. AS A RESULT, THIS PRODUCT, IS SOLD "AS IS," AND YOU THE PURCHASER ASSUME THE ENTIRE RISK AS TO ITS QUALITY AND PERFORMANCE.

IN NO EVENT WILL MAXSPECT LTD BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY DEFECT IN THE PRODUCT OR ITS DOCUMENTATION.

The warranty, disclaimer, and remedies set forth above are exclusive and replace all others, oral or written, expressed or implied. At no time will any Maxspect Ltd. dealers, agents, or employees be authorized to make any modifications, extension, or addition to this warranty.

Some states do not allow the exclusion or limitation of implied warranties or liability for incidental or consequential damages, so the above limitation or exclusion may not apply to you.



#### FCC warning statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device complies with Part 18 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

#### RF warning statement:

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.



**Maxspect. Innovative, efficient and versatile.**

**Maxspect Limited**

[www.maxspect.com](http://www.maxspect.com)

NOTE: Products, packaging, features and specifications are subject to change.

All screen images are simulated.

© 2009-2011 Maxspect Limited. Reproduction in whole or in part without written permission is prohibited. All rights reserved. Maxspect and Mazarra are trademarks of Maxspect Limited. Cree and XLamp are trademarks of Cree, Inc. Bridgelux is trademark of Bridgelux, Inc. Philips and Luxeon Rebels are trademarks of Philips Lumileds Lighting Company.

Owner's Manual Version 1.1.0