



## User Manual

# Model Information

Serial Number(s): \_\_\_\_\_

Software Version: \_\_\_\_\_

Date Assembled: \_\_\_\_\_

Date of Purchase: \_\_\_\_\_

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# Disclaimers/Safety Warnings

**Incorrect usage of this device could cause bodily injury or death. Follow all safety guidelines when assembling and using this fixture.**

Read all instructions and all warnings prior to use of the Aqua Illumination light fixture.

Use caution, and be aware of any shock hazards. **The Aqua Illumination light fixture is NOT waterproof.** Never submerge any part or cord in water, saltwater, or other solutions.

Aqua Illumination is not responsible for shock, damage, or loss of livestock due to inadequate mounting or non-intended use(s).

Do not look directly into the LED's or LED lenses any time the fixture is illuminated.

Only use the provided electronics and hardware, as other pieces of equipment may not be compatible with this fixture.

Only use a ground fault circuit interrupter (GFCI) power source. As with all electronics, use of a surge suppressor is recommended.

# Quick Start

1. Remove from packaging.
2. Plug in controller and communication cables.
3. Plug all power adapters into fixture (*do not plug into wall yet*).
4. Securely mount.
5. Place fixture on tank - Do **not** proceed unless fixture is safely and securely mounted.
6. Power on fixture by plugging in adapters into GFCI 15 amp rated power strip or GFCI wall plug-in.

As soon as all adapters are plugged in the fixture will resume normal operation.

In most situations your light will be pre-programmed to your date and time. If it has been over 30 days you may have to reset the clock.

By Default your light is set to auto mode. Sunrise will start at 0700 and sunset will start at 1900. The moon will follow a 29 day lunar cycle.

To edit any settings push the knob and select (Yes) to enter settings, then select the appropriate option. Exit the menu when finished. *See Menu structure in later pages.*

# Assembly

## Aqua Illumination Components

- 1-3 Power supplies as needed
- 1 Controller (if purchased)
- Pair of mounting cross bars
- Communication and power cables
- 4 Legs
- Mounting studs & nuts

## Assembly Instructions

1. Layout cross bars, and attach the end cap using the supplied M6 x 1.0 screws (*see figure 1*).
2. Insert the #10-32 studs into the fixture, then put nut on (*see figure 2*). This is adjustable to allow for desired gap between fixture and cross bar.

**Note: Do not tighten stud more than 1/4 inch into fixture. To insure security, use a low-medium**

**strength thread locking compound on each end of the stud.**

3. Mount the fixture as desired and check for fit on the intended aquarium. (*see next section for more on this*)
4. Attach the controller and communication cable(s) to the fixture(s). (*see figure 3*). The communication for the lights daisy chain together. **Each fixture has a unique serial number. When connecting fixtures, connect in ascending serial number order.**
5. Plug in power supply(s) to the light fixture(s). Each fixture has a power input and output. Use the supplied power cables to connect two fixtures together (*see figure 3*).

Fixture Length	Number of Power Supplies Required
1 & 2 ft.	1
3 & 4 ft.	2
5 & 6 Ft.	3

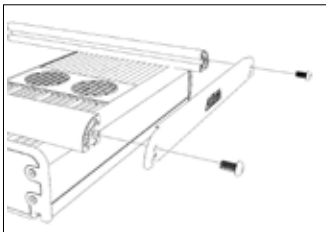


Figure 1: Cross bar end assembly

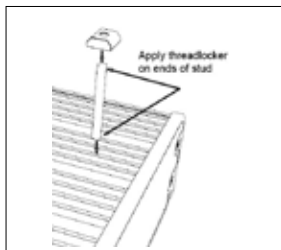


Figure 2: Stud and nut installation

**Do not connect more than two fixtures to a single power supply.**

6. Plug fixture into a GFCI receptacle to power up the Aqua Illumination light fixture. (See power supply specifications for further information.)

*It is recommended to plug the Aqua Illumination light fixture into a surge suppressor.*

**Attach all cords prior to providing power to the fixture. Never unplug cables unless the power has been disconnected.**

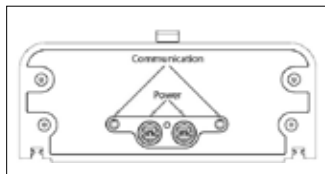


Figure 3: Control and power ports

# Mounting

The Aqua Illumination light fixture has been designed to be mounted or held in place by a number of methods. The light fixture should be mounted a minimum of 2 inches from the water surface. This will help keep the light fixture clean and avoid water splash.

## Leg Mounting

To stand the Aqua Illumination light fixture on an aquarium, slide legs into T-slots on the cross bars. Slide the legs to the desired location and tighten set screws. (See *Figure 4*).

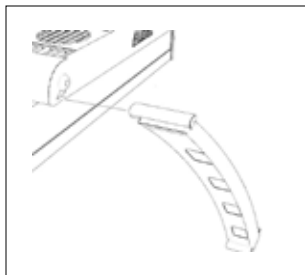


Figure 4: Leg mounted.

## Suspended (Pendant) Mounting

To suspend the Aqua Illumination light fixture above an aquarium, purchase the Aqua Illumination pendant kit and follow installation instructions.



## Hood Mounting

To mount the Aqua Illumination light fixture within a hood, ensure 3+ inches of clearance exists above the entire top surface for adequate ventilation. Exhaust vents with fans are recommended near each end to allow air to exit. Vents may also be needed directly above the fans for fresh air. (Fans push air downward towards the light fixture). In some aquarium hoods, additional fans may be needed for sufficient heat dissipation.

*If the fixture begins to overheat, it may automatically turn light intensity down or even turn the fixture off to prevent damage to the light fixture.*

The Aqua Illumination fixture may be mounted inside an aquarium hood using stainless steel #10-32 bolts and hardware of necessary length. The #10-32 hardware uses the same bolt holes as the suspending hardware. Two stainless steel #10-32 bolts can support an Aqua Illumination light fixture up to 6 feet long. (*See Figure 5*).

The legs may be used to support the Aqua Illumination light fixture inside a hood if space allows.

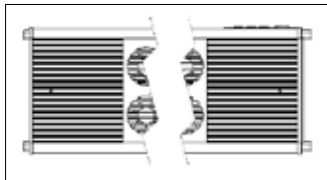


Figure 5: #10-32 Bolt holes.

# Acclimation Period

Every aquarium's needs are different. Adverse environment changes, such as lighting, may upset your aquarium. The Aqua Illumination light fixture may be considerably brighter than an aquarium is accustomed to.

If changing from another light source, it is not recommended to set the Aqua Illumination light fixture at 100% output. As with any change in an aquarium's environment, a slow acclimation period is strongly recommended. With an Aqua Illumination light fixture, start with a light level that is less than or equal to current light output, and slowly increase the lighting levels as needed. A light meter, such as a lux or PAR meter, is recommended for finding previous lighting levels and setting the Aqua Illumination light fixture. To find the desired lighting levels, turn the controller to "Manual" mode. Adjust color and lighting levels accordingly.

Light duration and intensity varies greatly depending on the aquarium's inhabitants and needs. Aqua Illumination cannot determine these needs. If you are unsure about an aquarium's lighting needs, check with your local aquarium stores, aquarium maintenance personnel, local aquarium clubs or online venues.

# Default Settings

Menu Item	Default Value
Sunrise Begins	0700
Sunset Begins	1900
Sunrise and Sunset	30 minute transition
Moonrise and Moonset	10 minute transition
Day White Intensity	100%
Day Blue Intensity	100%
Night White Intensity	3%
Night Blue Intensity	4%
Lunar Cycles	On

**Lights have a 15 second ramp up when turned on, or adjusted, in Manual mode to prevent shock or scare any livestock.**

# Manual/Auto Modes

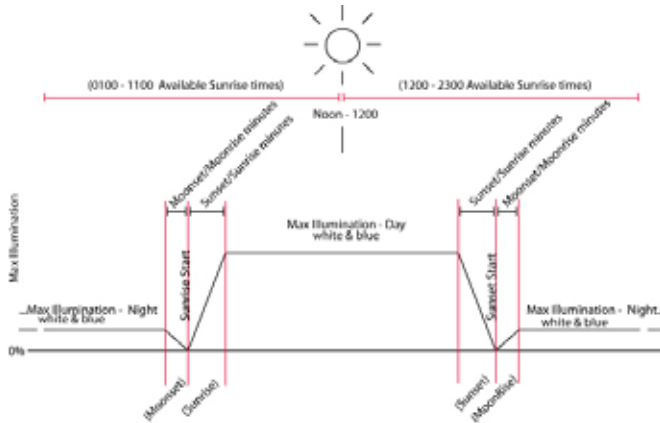


Figure 5: Labels without parentheses correlate to the controller's menu items and how they apply to day, night, and transitions.

# Manual Mode

Starting at the display screen, press or turn the knob. The control box will ask:

## **“Enter Settings”**

“Yes” or “NO” – Turn the knob to select yes or no. Selecting “Yes” continues on to the following menus. Selecting “No” goes back to the display screen.

*This prompt ensures intended changes only, rather than accidentally bumping the controller. It is important you exit settings mode to resume normal operation.*

## **1> “Set Mode [Manual]”**

Press to select an operating mode: “Manual” or “Auto”. Turn knob to desired operating mode. Press knob again when desired setting is dialed in. When knob is pressed to select operating mode the corresponding menu will appear (In this situation selecting “Manual” mode will

take us to the following Manual menu options.)

## **2> “Set Manual White”**

Press to select, then turn knob to desired setting (0-100%). Press knob again when desired lighting is dialed in. This setting takes effect when the knob is pressed the second time. When the knob is pressed to select the desired setting it will return to the Manual Mode menu.

## **3> “Set Manual Blue”**

Press to select, then turn knob to desired setting (0-100%). Press knob again when desired lighting is dialed in. This setting takes effect when the knob is pressed the second time. When the knob is pressed to select the desired setting it will return to the Manual Mode menu.

#### **4>“<< Save and Exit”**

Exits out of the Manual mode menu, saves the Manual settings, and returns to the original display window when the knob is pressed.

In Manual mode the display screen will show the current time in the top right of the screen, the date in the top right, “MANL” to display it is in Manual mode in the lower left, and “W” displaying the white light setting and “B” displaying the blue light setting in the lower right of the screen.

# Auto Mode

Starting at the display screen, press or turn the knob. The control box will ask:

## **“Enter Settings”**

“Yes” or “NO” – Turn the knob to select yes or no. Selecting “Yes” continues on to the following menus. Selecting “No” goes back to the display screen. Press the knob when desired setting, 1-6, is dialed in.

This question is to make sure you intended to change a setting rather than accidentally change a programmed function. After entering settings, you must select the “Exit & Save” menu for the light to resume normal operation.

## **1> “Set Mode [Auto]”**

Press to select an operating mode: “Manual” or “Auto”. Turn knob to desired operating mode. Press knob again when desired setting is dialed in. When knob is pressed to select operating mode the corresponding menu will appear (In this situation selecting “Auto” mode will take us to the following menu.)

## **2> “Set Date & Time”**

Press the knob to select this menu and to set the date and time.

**Year:** The menu will ask for the last two digits of the year. Turn the knob to the desired year and press the knob to continue.

**Month:** The menu will ask for the month by the corresponding number (Jan. =1, Feb. =2, Mar. =3, etc.). Turn the knob to the desired month and press the

knob to continue.

**Day:** The menu will ask for the day of the month. Turn the knob to today's date and press the knob to continue.

**Day of week:** The menu will ask for the day of the week. Select the day by the corresponding number (Sun-1, Mon-2, Tues-3, Wed-4, Thurs-5, Fri-6, and Sat-7). Turn the knob to the desired day of the week and press the knob to continue.

**Time:** The menu will ask for the time of day, starting with the hour. Turn the knob to dial in the hour of the day. The clock is in military time to keep confusion to a minimum (also refer to the military conversion chart if further assistance is needed). Once the hour is dialed in, press the knob. Now select the minute by dialing in the appropriate number; and pressing the knob to continue back to the Auto mode menu.

### 3> "Rise and Set times"

This menu tells the light fixture when to ramp the lights up and down to simulate Sunrise, Sunset, and moon effects when Auto mode is selected.

**Sunrise Start:** Select the time beginning with the hour. Dial in the desired hour and press the knob to select. Then dial in the desired minutes and press the knob to continue. Note that the Sunrise can only take place between 01:00(1am) and 00 (11:00am).

**Sunset Start:** select the time beginning with the hour. Dial in the desired hour and press the knob to select. Then dial in the desired minutes and press the knob to continue. Note that the Sunset can only take place between 12:00(12:00noon) and 22:00 (10:00pm).



**Sunset/Sunrise:** select the length of sun transition times. This is how long the Sunset and the Sunrise will last each day. This one setting will set both Sunrise and Sunset duration. Dial in the desired length of time (0-60 minutes) and press the knob to continue. This setting is usually set between 30 to 60 minutes.

**Moonrise/Moonset:** Select the length of moon transition times. Dial in the desired length of time (0-60 minutes) and press the knob to continue back to the Auto mode menu. This setting is usually set for 5 to 30 minutes.

Sunrise and Sunset has limited range to avoid overlap. For an earlier Sunrise or later Sunset, adjust the Aqua Illumination clock behind or ahead to accommodate this. Consider the adjusted controller as the simulated time for the aquarium. Sunrise must happen in the morning

hours, and sunset must happen in the afternoon hours. To change the Aqua Illumination time, go to Auto Mode option #2.

The darkness between the sun settings and moon settings allows many nocturnal organisms to come out of hiding more quickly, and slowly adjust to the moon lighting and lunar cycles. This gives fish a chance to hunt for food during nocturnal times, and help corals reproduce with simulated lunar cycles.

#### 4> “Max Intensity”

Press the knob to select this menu. This will allow us to set the maximum light intensity for both day and night.

**Day White:** Set the day white intensity by dialing in the desired number, 0-100%, and pressing the knob to continue.

**Day Blue:** Set the day blue intensity by dialing in the desired number, 0-100%, and pressing the knob to continue.

**Night White:** Set the night white intensity by dialing in the desired number, 0-100%, and pressing the knob to continue.

**Night Blue:** Set the night blue dialing in the desired number, 0-100%, and pressing the knob to continue.

**Lunar Cycles:** Set the lunar cycle to “On” or “Off” by dialing a choice and pressing the knob to continue back to the Auto Mode menu. The Lunar Cycle will automatically adjust the night white and blue inten-

sities between 0 and the maximum night intensities to simulate a 29 day moon cycle.

Before setting the blue and white LED intensities, Aqua Illumination strongly suggests using a lux or PAR meter to match previous aquarium light levels. Use the Manual mode to find the desired light intensity settings. Always slowly acclimate changes in an aquarium’s environment.

#### 5> “Statistics”

Press the knob to select this menu. Statistics will display how many minutes the light fixture has operated, and the software version. Press the knob again to return to the Auto mode menu.

**Admin Mode:** By turning the knob in this menu, advanced settings may be accessed.

**“Reset All”** - This will reset the saved settings back to the factory default.

**“Ambient Set”** - This ‘zeroes’ the fixtures to use the ambient temperature as the zero point. Change this only if the fans don’t seem to be turning on as they should.

## 6. “<< Save and Exit”

Exits out of the Auto mode menu, saves the Auto mode settings, and returns to the original display window.

**“High Temp”** - This sets the high temperature; this is the point at which the fixture will go into thermal throttle mode. Contact AI before changing this setting.

**“Max White” & “Max Blue”** - Sets startup default of the fixture(s) should the controller be disconnected upon startup.

In Auto mode the display screen will show the current time in the top right of the screen and the date in the top right. Usually the lower part of the screen is blank, unless the fixture is performing a pre-programmed action, such as:

Auto	Moonset
Auto	Sunrise
Auto	Sunset
Auto	Moonrise

# Maintenance

Inspect the light fixture regularly.

Do not lay objects on top of the fixture, controller, or power supply.

Unplug the light fixture from the outlet when cleaning to prevent any shock hazards.

The light fixture should be wiped off with a damp cloth once a week. Avoid the power plug area. A can of compressed air may be used to blow dust out of the heat sink fins. Wiping and blowing unwanted buildup will help prevent salt creep and hard water spots from accumulating.

Do not allow any liquids to pool on top of or inside the light fixture. The light fixture is not water proof. Do not submerge in water, saltwater, or other solutions.

# Power Supplies

Power Output	180W
Universal Input Range	100 to 240VAC / 50-60Hz
Cable Length	6 feet
AC Connector	IEC 320 Inlet
Regulatory Compliance (meets requirements/limits) CE, UL, & RoHS	

# Troubleshooting & Tips

## Power loss

In case of a power loss all settings will be saved to the units memory and will resume with power. If the fixture is without power for more than 30 days the clock may need to be reset. All other light settings will remain saved until the next time the light fixture is set to different values.

## Controller displays a blank screen.

If the controller displays nothing check power to the light fixture and a clean and secure connection to the fixture. If this does not take care of the issue, cycle the power by disconnecting all attached power supplies, wait for 30 seconds, and reconnect the power supplies.

## A single LED, or bank of LED's, is not working.

The Aqua Illumination LED's are rated by their manufacturer for over 50,000 hours. However, in the event that a LED fails, contact Aqua Illumination. A triple LED 'puck' or a 1 foot fixture section can be replaced in-house or out-of-house by contacting Aqua Illumination.

## Fixture dims to half intensity.

The lights will automatically dim to half the command intensity in the event that the fixture is operated beyond its intended ambient temperature range. Once the temperature has gone down, the fixture will attempt to go back to the intended intensity.

If this continues to happen, check the fans as well as the hood/canopy airflow.

## Fixture(s) shut down completely.

If a fixture(s) shut down, and do not come back online, it is possible that the power supply has gone beyond its maximum temperature. This can happen if the fixture(s) is ran for more than 12 hours at full power and there is other equipment around the power supplies that dissipates heat.

The power supplies are tested at full power for over 24 hours of full intensity operation, however when enclosed, greater spacing between units may be required. A small fan may be necessary to circulate air.

# Limited Warranty

The Aqua Illumination light fixture includes a two year limited warranty starting at the date of original purchase.

Please review the warranty online at:  
<http://www.aquaillumination.com/support.html>

Any light fixture that exhibits tampering or modification will void the warranty.

The warranty for each fixture is recorded upon original sale. Each light fixture can be identified by serial number.

All warranty and support claims should be submitted to:  
[support@aquillumination.com](mailto:support@aquillumination.com)



# Notes

## **Contact and Support Information**

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