

User Guide

for AI Controller

Rev. 1 - 12.8.2010



Aquallumination LED System Controller allows you to automate the operation of your new lighting module to perform everything from basic on/off timer functions to a variety of coral reef light simulations. The controller provides the following features:

- 14 independent light timers, with independent intensity (dimming) levels.
- Lunar Cycle simulates phases of the moon based on calendar day/month.
- Thunderstorm simulation: Randomly creates lightning and cloudy weather effects.
- Manual or Automatic Mode.
- Override timer operations at any time with a push of a button.
- Maintains clock and configuration during power outages without the need for batteries.

Quick Setup

Follow these steps to quickly set up your lighting controller:

1. Set The Model

When you first connect the controller, you will see the display shown to the right. Turn the knob left or right to choose your lighting model, either **Sol White** or **Sol Super Blue**. Now press down on the knob to lock in your setting.



CHOOSE MODEL:
SOL SUPER BLUE

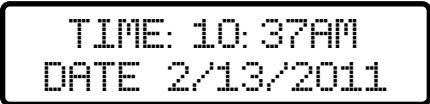
2. Set The Clock

Turn the knob clockwise until the **Set Clock** menu appears. Now press down on the knob to select the Set Clock menu item.



5: SET CLOCK?
PRESS TO SEL

The display now shows the current date and time set in the controller. The HOURS field should be blinking. Turn the knob left or right to set the correct hour. Press down on the knob to lock in the new value. The MINUTES field should now be blinking. Repeat the same procedure to set both the time and date. When you're done sequencing through all the fields, , the display will show **Saving...** as the new time/date setting will take effect.



TIME: 10:37AM
DATE 2/13/2011

3. Setup Timers

Timers are used to set or change the light intensities at a given time of day or night. Two timers have already been set up at the factory. Timer #1 is set for 8:00 AM with LED intensities of 90%. Timer #2 is set for 9:00 PM with a LED intensity of 0% (off). With this setup, the lights will come on at 8:00 AM and go off at 9:00 PM.

To change the time and/or intensity, turn the knob until the **Setup Timers** menu appears, then press down to select it.

At this point, the display gives you the option to select a timer. Leave the display set on **Sel Timer: 1** and just press the knob again.



1: SETUP TIMERS?
PRESS TO SELECT



SEL TIMER: 1
ACTIVE



TIME: 8: 00PM
LEDS: WH BL RY

To change the time of Timer #1, rotate the knob and enter the current hour, minute and AM/PM indicator.

The 2nd line of the display will show WH for White, BL for Blue, and RY for Royal (Note that the RY option will only be shown on Sol Super Blue models). For the White setting, turning the knob toggles between “WH” and “- -”. If set to “WH” you are enabling the white LEDs to be changed with this timer. If set to “- -”, the white LEDs will not be changed by this timer and will remain at their current intensity. For this setup, select the “WH” “BL” and “RY” conditions, then press down on the knob.

The display shown at the right will now



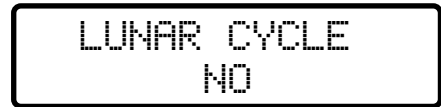
appear. Turn the knob left or right to set the intensity from 0% to 100%. This is the brightness level you want for the LEDs. After choosing the desired percentage, press down on the knob. The display will then allow you to set levels for the Blue LEDs, and then the Royal LEDs in exactly the same way. When you are done, press down on the knob.

The Ramp Period display will now appear. This lets you choose how many minutes it will take for the lights to arrive at your desired intensities. The default is set for 5 minutes. This means that if the

lights were OFF, it would take 5 minutes to slowly brighten them up to your desired levels. Press down on the knob to lock in the ramp period.

The next screen will prompt you to turn on or off Lunar Cycle for this timer. This feature will slightly dim or brighten the LEDs to simulate a full moon, half-moon, etc. based on the day of month. You would probably never use this feature for timers set up during the daylight hours. It is more appropriate for use with a night timer when LED intensities are set very low or completely off. Turn the knob to select ON or OFF, then press down. The display will show **Saving...** as the all the timer settings you have chosen are written to memory.

At this point, timer #1 is all setup. You can repeat this procedure for Timer #2. Additional timers may be set up to change the lights levels at different times of the day.



Manual Mode

The controller can operate in either AUTO or MANUAL. AUTO Mode is the normal mode of operation. In this mode, you can set and use timers to automatically turn the lights on and off at certain times of the day or night. In MANUAL mode, all of the timers are disabled and you will need to turn the lights on and off manually by pushing down on the knob.

To set the controller for Manual mode, turn the knob and select the **Set Mode** menu item. If the controller is currently in AUTO mode, it will give the option to switch to MANUAL mode. If the controller is in MANUAL mode, you can switch back to AUTO mode.

You can turn the lights on or off by push down on knob and hold it down for 5 seconds. If the lights were off, they will turn on. If the lights were on, they will turn off.



You can use the **Manual Setup** menu to set the ON and OFF intensities for the lights. For example, you can define ON as 80% brightness and OFF as 5% brightness. Each LED color can have an independent ON/OFF level.

Thunderstorms

The Thunderstorm feature allows you simulate cloud cover and lightning effects. When enabled, thunderstorms can occur randomly at any time of the day or night.



ENABLE STORMS
YES

The simulation starts by first slowly dimming the lights as the storm approaches, simulating increased cloud cover. After a short period of time, lightning flashes will occur at different intensities and rates. A storm can last from 5 minutes to 30 minutes. To set up thunderstorms, turn the knob until the Thunderstorms menu appears, then press down on the knob.

- **Enable Storms** – Choose Yes to enable the thunderstorm feature. Choose No to disable it. If you choose No, no other actions are needed and the display returns to normal operation.
- **Chances** – Sets the odds of a thunderstorm for today. For example, if set to 50%, there is a 50% chance that a thunderstorm will happen today. If set to 100%, a storm will always happen sometime during the day or night.
- **Storms Per Day** – Sets the number of storms per day. You can choose from 1 to 5 storms. This is the number of storms that may happen in every 24 hour period.
- **Start Storm Now** – Provides a convenient way to start a storm right now and see the effects.

View Timers

The View Timers menu is useful when setting up your timers. It lets you see all the timer settings for an individual timer on one compact screen. To use this menu, select **View Timers** and press down on the knob.

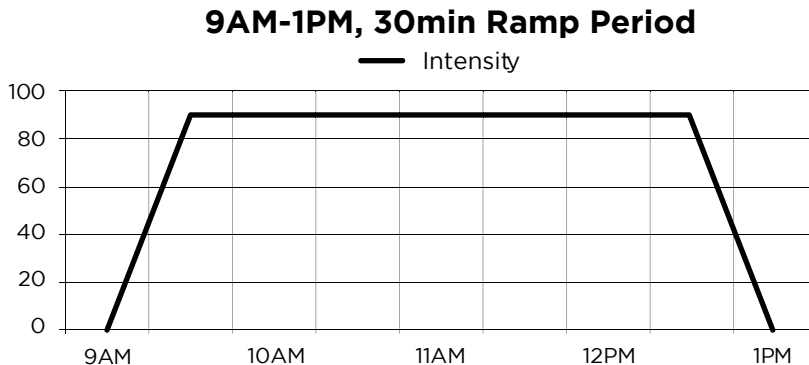
The first line shows the timer number (T1 – T14) followed by the time set, followed by the Ramp Period in minutes. If Lunar Cycle was enabled, a small icon of the moon is shown next to the time. The second line shows the intensity levels for the three LED types (on the Sol White, two LED types). If the timer has any of the LED types disabled (selecting “-” when setting up the timer) then that LED intensity is not displayed.



You can turn the knob to view other timers. Push down on the knob. You have the option of modifying the selected timer. If you choose no, you are returned to the main menu and the timer is not changed. If you choose Yes, you modify the timer exactly the same way as setting up a timer.

Timers & the Ramp Period

It is important to understand the effects of the Ramp Period on timers. The number of minutes set for Ramp Period actually adds to the time setting for a timer. For example, suppose you have a timer set for 9:00 AM with a ramp period of 30 minutes. At 9:00AM the lights begin to brighten and will take 30 minutes to ramp up to your full setting. So even though the timer is set for 9:00 AM, the lights won't reach your intensity settings until 9:30 AM, because the 30 minute ramp period is added to the time.



The same thing happens when the lights dim down. If a timer is set for 1:00PM at 0% brightness and the lights are at 100%, it will be 1:30PM before the lights are off. If you are using many or all of the 14 timers, it is a good idea to make sure that a timer has a chance to ramp down to its final setting before another timer kicks in. If ramp periods overlap, the new timer will take over and use its ramp settings instead. Doing this won't hurt anything and in fact, some creative effects can result. Just be aware that if you accidentally set up timers with overlapping times, the effects may look strange or result in something you did not expect.

Changing Models

To change models, select the Other menu and press down the knob. Press again to bypass the LCD Brightness screen. Turn the knob to select either Sol White or Sol Super Blue.

NOTE: Make sure and select the proper model. Selecting the wrong model will result in erratic behavior and/or certain functions will not work properly.

Setting LCD Brightness

To change LCD brightness, select the Other menu and press down the knob. Turn the knob to select the desired brightness level. Push down on the knob to save the new settings.

Power Outages

Your controller has a built-in, permanent power source that never needs replacing. In the event of a loss of power, the clock will maintain the correct time for 3 to 5 days. When power is restored, it takes approximately 1 hour to fully recharge the power source in preparation for the next outage.

NOTE: Your timer settings and options are stored in permanent memory and will never be erased, no matter how long the controller is without power.

Factory Reset

In the unlikely event your controller becomes inoperative, has a blank or dark screen, or is not operating properly, you can perform a factory reset. We recommend that you first try and do a Firmware Update to see if this fixes the problem. If not, a factory reset can be performed. Note that a factory reset operation erases all timers and options, resets the clock, and sets the controller back to its initial factory settings. There are two ways to perform a factory reset:

1. Select the Other menu and press down the knob. Press again to bypass the LCD Brightness screen, then press again to bypass the Select Model screen. When Factory Reset appears, push down the knob. A second screen will verify your actions. Select Yes to factory Reset, select No to cancel. The controller will then prompt you to remove the jack for 5 seconds and plug it back in again.
2. Factory Reset can also be performed during initial power up. We recommend you use this method only if the controller is non-functional or the display is not working. To perform a power-up factory reset, unplug the jack and plug it in again. During the initial version display screen or within 3 seconds, immediately push down on the knob. Continue to hold the knob down for at least 15 seconds. Now release the knob and unplug the jack for 5 seconds. Plug it back in again and the controller will start at its factory reset condition.

Firmware Update

The firmware in your controller is updated from time to time to add new features and fix problems. We recommend you visit the Aqua Illumination website to see if a new version of the firmware is available. Note that your current firmware version is displayed on the 2nd line during each power up. There is no need to download and install the same version.



AQUAILLUMINATION
FIRMWARE UPDATE

Firmware updates can only be performed on computers running either the Windows or Linux operating systems. To perform a firmware update, follow these steps:

1. Download the latest firmware version from the Aquaillumination website (<http://xxxxxx/firmware.html>).
2. Unplug the jack.
3. While pressing and holding the knob down, plug in a USB mini cable that is connected to your computer. The controller should display the message **Aquallumination Firmware Update**. If your computer indicates that the USB device is unrecognized, unplug the USB cable and try again. Make sure you are holding down the knob before plugging in the USB connector.
4. The controller will show up as a new flash disk drive in your computer.
5. Open the flash drive. There will be a single file on it called **firmware.bin**. Delete this file.
6. Drag or copy the new firmware update file to the drive. There is no need to rename the file.

7. Wait for the copy operation to finish.
8. Unplug the controller from the USB cable, and plug your lights back in.

When major version change occurs, some firmware updates may erase your existing options and timer settings. Check the firmware page on the website for further information. In any case, it is always a good idea to write down your settings in case you need to restore them for future updates or repairs.