



User's Manual

Revision: 23.06.15.01

LumaLanes Swim Pacing System

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SAFETY INFORMATION

Liability Disclaimer

This software or hardware is developed for general use in a variety of swim training applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. LumaLanes Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Notes On System Safety

The system runs on 12 Volts, the same as a car battery. Because of the low voltage and current that the lights operate at, they are considered "low energy" and don't require any special safety measures because they can't electrocute anyone or cause any real damage or fire hazard.

LED STRIP HANDLING GUIDELINES

Your LumaLanes LED light strip is a delicate piece of electronics, containing multiple integrated circuits and LED elements enclosed in a waterproof, transparent casing.

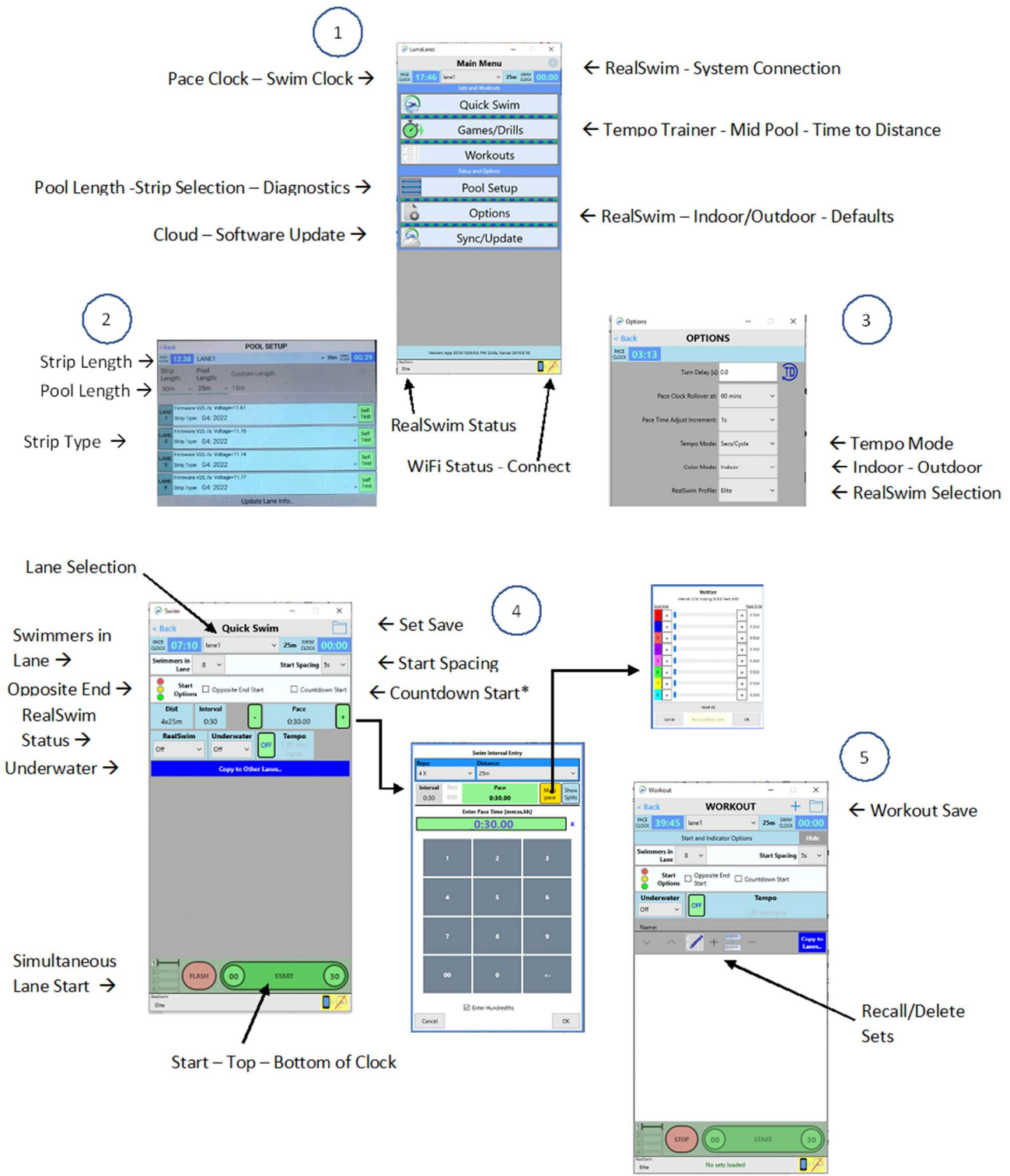
While designed to withstand normal usage, including rolling and unrolling, and submersion in the water for many hours, there are a few precautions you should take when handling the strips to avoid stress and possible damage to the strips.

- ❓ Do NOT tie the LED strips into knots when pulling the LED strip back into the storage sack..
- ❓ The white cable and connector is fastened to the storage bag with velcro and can be plugged into the control box..
- ❓ When retrieving the LED strip you can loosely put it back in the storage bag with the weights attached. Leaving the weights attached makes deploying and retrieving much easier.
- ❓ The LED strips have a yellow mark every 5M for easy identification of weight placement locations. If your pool has strong currents moving the LED strip around you may order extra weights.
- ❓ You should not plug or unplug the LED strip(s) from the control box when the power is on.
- ❓ Avoid laying the strips on the deck or any place where they can get stepped on.

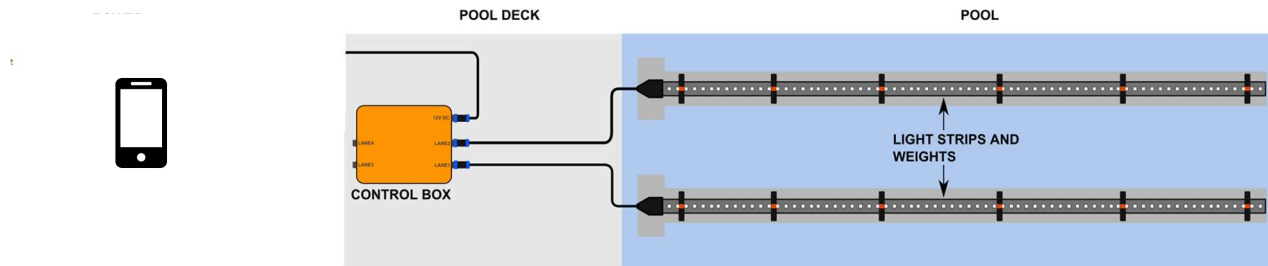
LUMALANES QUICK START GUIDE

First Time Setup

1. Install the SwimPacer app on your mobile device (iPhone or Android). The app is available on the Apple App Store, or the Google Play store -- search for "lumalanes" or "swimpacer".
2. Open the control box and turn on the battery power switch located on the battery, then close the control box.
3. Verify you can see the battery LED charge lights on the side of the box (4 indicate full charge)
4. Connect the LED strip to the control box (leave the LED strip in the bag).
5. Power on the control box and observe the LEDs in the storage bag go through a brief light sequence test.
6. Observe the LED light on the front of the control box goes from red to blue to green and then connect your mobile device to the LumaLanes WiFi. Password is swimfast. (see WiFi section for more details).
7. Open the app and connect to the control box.
8. Set the strip length, set the pool length and verify you have selected Gen4 strips.
9. Go to the options menu and set your Tempo Mode, your color mode (all red for outdoor) and your RealSwim setting (see RealSwim section for details of options).
10. Go to the Quick Swim menu and set your parameters. You can set individual times for up to 8 people per lane. See the Quick Swim section for complete details
11. Select Start and you should be able to observe the LEDs in the storage bag running according to the parameters you set up.
12. Stop the lights and turn off the app.
13. Turn off the control box and disconnect the LED strip.
14. Check your battery charge level and if it is low recharge the battery before going to the pool (see the battery section for more details)
15. You are now ready to go to the pool!



At The Pool - Setting Up



When the system is completely setup, it will look something like this (showing a 2-lane setup):

With practice, it should only take about 5 minutes to set up your system and have it ready to use. The overall setup sequence is outlined below

1. Hand the swimmer the handle of the LED strip with the weight attached.
2. Have the swimmer slowly pull the LED strip down the pool while feeding the LED strip out of the bag, making sure the LEDs stay pointed up.
3. When a weight, that is attached to the LED, is deployed make sure it is upright as it enters the pool and have it drop to the bottom of the pool. The swimmer will slowly pull the LED strip along on the bottom of the pool
4. Connect the LED strip(s) to the control box.
5. Turn on the control box -- the status indicator light(s) on the control box will change as the system boots up:
Red = powering up, Blue = initializing, Green = ready.
It typically takes 1-2 minutes for the control box to fully boot up and be ready.
6. On your phone, go into the WiFi settings and look for a WiFi signal for LumaLanes. Connect your phone to this WiFi network* -- **the password is "swimfast"**.
7. Run the app -- it should connect to the control box and initialize. Go to the Pool page and make sure the lane length is set correctly. Go to the Quick Swim page to run a quick set, or the Workout page to run a whole group of sets.

At The Pool - Shutting Down

1. Power down the control box and disconnect the LED strip(s)
2. Pull the LED strip and cable back into the bag. The hole in the bottom of the bag will let the water drain out.
3. Charge the battery before storing, so you are ready to use the next time you go to the pool.
4. For long term storage you should fully charge the battery and power off the internal battery before storing.

Tips On WiFi

1. If there are other WiFi signals at the pool that your phone is set to connect to, you may need to tell your phone to "forget" these networks to prevent it from automatically connecting to those networks and disconnecting from the LumaLanes network. You may also need to turn off the cellular data connection to keep the phone from disconnecting from the control box.

SOFTWARE INSTALLATION

Install The SwimPacer App

The application to control your LumaLanes system is called “SwimPacer” and is available for iOS, Android, Windows and macOS devices. See the section below for instructions for installing it on your device. The Windows and macOS versions also include a “lane simulator” program for visualizing workouts. Installation and use of the SwimPacer app and the Lane Simulator software on Windows and macOS are covered in a separate Lane Simulator Software Manual.

If you haven't installed the SwimPacer app yet, be sure to do so before going to the pool. **You can use the app before going to the pool and without the control box** – some features will be disabled, but you can get a feel for how the app works and even pre-program in some workouts.

Install On Android Device

Compatibility

The SwimPacer app is compatible with most ARM-based Android devices (phones and tablets), running Android “Kitkat” or newer. The processor must support the “NEON” command set (most devices produced in the last few years meet this requirement).

Install from Google Play Store

Search for “SwimPacer” or “LumaLanes” on the Google Play store and install the SwimPacer app like any other app. If you wish to get early access to new versions of the app, there is a “beta” test program available – contact LumaLanes for more information.

Install On Apple Device

Compatibility

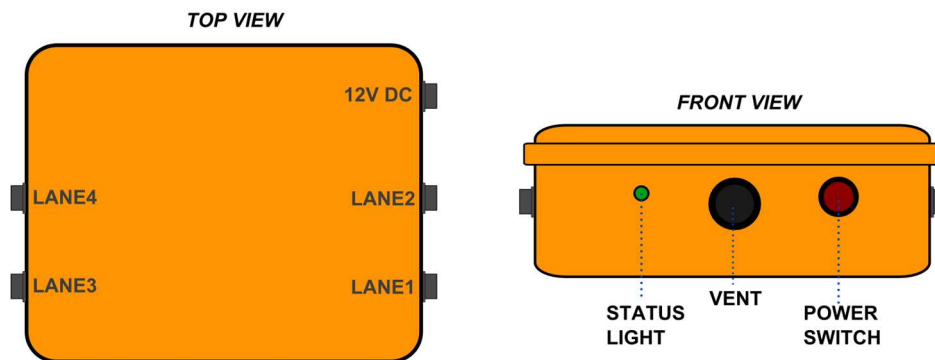
SwimPacer is compatible with most newer iOS devices (iPhones and iPads). An iPhone 5 or later is recommended. Version 8 or later of iOS is required.

Install from Apple App Store

Search for “LumaLanes” or “SwimPacer” on the Apple App store to find the SwimPacer app and install it normally.

Control Box Overview

The layout of the control box's connectors and controls is shown below:



The control box is sealed shut at the factory and should not be opened unless instructed to do so by LumaLanes. The box is waterproof when closed, but should be kept as dry as possible to lessen the chance of contamination. Keep the blue caps on the connectors when not in use to keep the connectors dry.

NOTE: If you have an older-model control box, it may look different. Contact LumaLanes about obtaining an update to the latest model.

Setup The Control Box

The control box contains the “brains” of the system, including separate processors for controlling timing and lights in each lane, as well as a main processor for handling the built-in WiFi network. The box should be kept closed and in a safe area, outside the splash zone, at all times.

Follow these steps to set up your control box:

1. Ensure the internal battery is powered on before coming to the pool.
2. Place the control box on the pool deck in a location where the cables from the light strips can reach it.
3. Connect the end of each light strip to one of the 7-pin lane connectors on the control box. Rotate the connectors until the white marking of the LED connector matches the white indicator on the control box connector, then push them in gently.* You can connect up to 4 strips to the box, labeled “Lane 1” through “Lane 4”. It doesn't really matter which connector you plug a strip into, as long as you know which strip is plugged into which lane connector when using the SwimPacer app.
4. Turn the power switch ON. Wait for the status light on the front of the box to turn green. You should see a “self test” sequence pattern move down each of the connected light strips when you turn on the power.

Control Box Status Light

There is a status light on the control box, located near the power switch. When the system is powered on the power switch will light up and the status light will go through the following sequence:

- ❏ Red – indicates that the system has power and is initializing.

- Blue – indicates that the lane controllers have been initialized.
- Green – indicates that the system has finished initializing and the WiFi connection is available. When you update the system (see the [Update Procedure](#) on the [Sync/Update Page](#) for more), this LED will flash slowly once the update is completed.

NOTE: If you have an older model control box, it will have 3 separate LEDs, a red, yellow and green one. The green LED will come on once the system has fully initialized and is ready to use.

CONNECTING TO THE CONTROL BOX WiFi NETWORK

Before you can use the SwimPacer app with the Control Box you need to connect your phone to the Control Box's WiFi network. The process is similar to connecting your phone to a WiFi network at a coffee shop or at the office.

Connecting To The LumaLanes Control Box WiFi

After the control box is powered up and initialized (the control box status light will be green), the control box will act as a WiFi "hotspot" that your smartphone or tablet can connect to. The WiFi signal has enough range to easily reach across a 50m pool, but may not be able to go through walls or other obstructions.

Once you have connected to the WiFi for the first time, your phone should "remember" the connection and connect automatically next time. Please read the following sections for additional details on how to connect to the WiFi with your device.

Note: The WiFi provided by the control box is not connected to the Internet – it is only for your phone to communicate with the control box.

The current connection status is shown on the Bottom Status Bar – see [Connection Status Indicator](#) for more information.

WiFi Network Name (SSID)

The WiFi network is named LumaLanes. If you are using more than one LumaLanes control box at the pool, one of the WiFi networks will have a unique name, but the name will always include the word "LumaLanes".

WiFi Password

The password is "swimfast" (without the quotes). It is recommended that you not share this password to prevent someone else from connecting to the system while you are trying to use it. Only one phone can operate the system at a time.

Connecting An IOS Device To The LumaLanes WiFi

Open your phone's Settings app and find the WiFi settings. Be sure the WiFi is turned on and then wait for the list of available WiFi networks to be populated. When you see the network with "LumaLanes" in the name, tap on it and you should be prompted for the password, which is "swimfast".

Hints:

If there are other WiFi networks at the pool that your phone is set to connect to, the phone may automatically switch to one of those networks and drop the connection to your control box. You may need to tell your phone to "forget" these

other networks while you are using the LumaLanes system. You can do this by opening the Settings app, going to the WiFi settings and tap on a network in the list of available networks, then tap on “Forget This Network”.

Sometimes it can help if you put your phone into “Airplane mode” and then turn on the WiFi – you won't be able to send/receive phone calls, but it will stop the phone from automatically switching between the WiFi and cellular data networks (when the phone switches to a cellular data network, it may drop the WiFi connection to the control box).

Connecting An Android Device To The LumaLanes WiFi

Go to the phone settings, then select the WiFi settings and make sure that WiFi is turned on. It may take a minute or two for the list of available networks to be populated. When the network with “LumaLanes” in the name appears, tap on it and then enter the password “swimfast” and the phone should connect to the control box.

Sometimes it can help if you put your phone into “Airplane mode” and then turn on the WiFi – you won't be able to send/receive phone calls, but it will stop the phone from automatically switching between the WiFi and cellular data networks (when the phone switches to a cellular data network, it may drop the WiFi connection to the control box).

Hints:

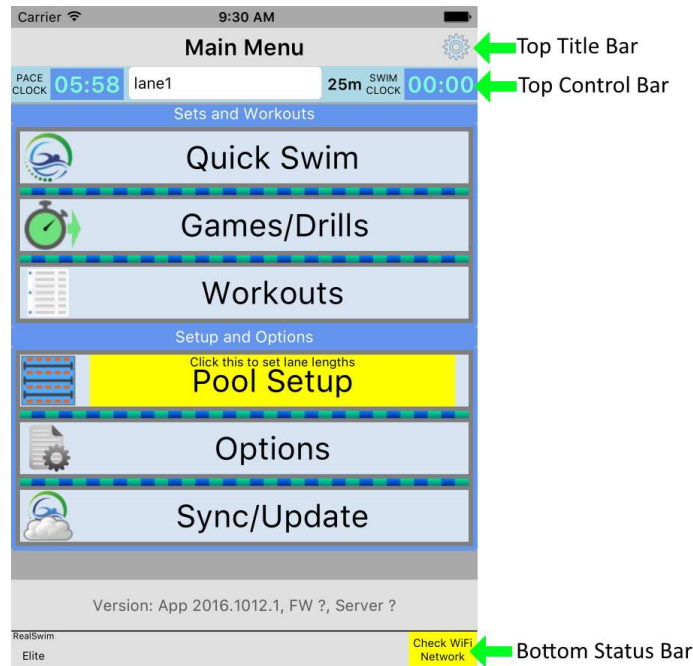
If your Android phone displays a notification about the network not having an internet connection, click on the notification and select the option to “stay connected” to the LumaLanes WiFi network, otherwise your phone may switch to another connection and be unable to control the system.

If there are other WiFi networks at the pool that your phone is set to connect to, the phone may automatically switch to one of those networks and drop the connection to your control box. You may need to tell your phone to “forget” these other networks while you are using the LumaLanes system. You can do this by opening the Settings app, going to the WiFi settings and tap on a network in the list of available networks, then tap on “Forget This Network”.

USING THE SWIMPACER APP

Tap the LumaLanes icon on your device's home screen or app launcher to start the app. If the app isn't already running you will see a "loading screen" and then the main menu page will be displayed.

Common Control And Status Bars



Each screen or page of the app has some common elements, such as the Top Title Bar, the Top Control Bar, and the Bottom Status Bar.

Top Title Bar

The topmost part of each page shows the name of the page, and may also have a "Back" button on the left side for returning to the Main Menu page. On Android devices, you can also press the system "Back" button to accomplish the same thing.

On the Main menu page the Top Title Bar also has a gear icon, which allows you to access the RealSwim Menu and the Connections Settings log. See the RealSwim section for additional details. The Connections Settings log is used for troubleshooting.

Top Control Bar



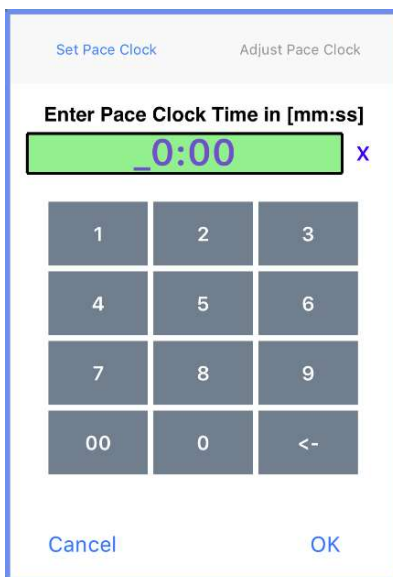
The appearance of the Top Control Bar varies a little depending on which page or screen you are on – some controls are only available on certain pages. The function of each control is explained below.

Pace Clock

The software maintains an internal pace clock of its own that is displayed here. This clock runs continuously and will roll over at either 59:59 or 99:99 (see [Pace Clock Rollover](#) on the [Options Page](#) for information on how to set the rollover time).

Synchronizing Pace Clocks

If you tap on the pace clock display, a pop-up box will be shown where you can set the pace clock time and make adjustments to synchronize it with the pace clock at your pool.



To synchronize the pace clock first enter a time that is 10-15 seconds ahead of the current facility clock time, then right as the times match press OK. If the times are just a bit out of sync, select the “Adjust Clock” tab and then you can press the “+” or “-” buttons as needed to adjust the pace clock. Press “OK” when complete.

Lane Select Control

This control is used to set the lane that you are controlling. Tap on the lane number and then select a lane from the drop-down list. If a lane controller is not installed, or has not been initialized, then that lane will be displayed in lowercase, otherwise it appears in all uppercase.

Lane Length Indicator

Just to the right of the Lane Select Control is the current lane length setting – make sure this matches your pool! The lane length is set in the [Pool Setup Page](#).

Swim Clock

When present, the swim clock displays the elapsed time of the current workout or swim set. It is automatically reset each time you start a new workout or swim set. It can also display the time remaining for the current set with a countdown to zero. Tap on the Swim Clock display to toggle between “normal” and “countdown” mode. When in normal mode, the numbers will increase and be displayed in green; when counting down, the numbers will be orange. The time remaining shows the time until the last swimmer finishes the set.

Bottom Status Bar

The status bar on the bottom of each screen is used to display informational messages, the current RealSwim setting, and WiFi connection status.

RealSwim Setting Indicator

The current RealSwim profile setting is displayed here. See [RealSwim Profile](#) on the [Options Page](#) for information on how to select the active RealSwim profile.

Connection Status Indicator

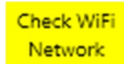
Shows an icon or message that indicates if you have a connection to the control box. Can be any of the following:



Green connected icon – indicates phone has established a connection to the WiFi on the control box and is successfully communicating with the box.



Yellow “not connected” icon – indicates phone is connected to the control box’s WiFi, but hasn’t established a connection to the control box’s system software. You will probably also see the “Not Connected” box when this happens. You can tap on this icon to bring up the “Not Connected” box if it’s not already showing.



Yellow “Check WiFi Network” - indicates phone is NOT connected to the WiFi on the control box. It might be connected to another WiFi network.

Not Connected Box

If your phone doesn’t have a connection to the control box for whatever reason, you may see the “Not Connected” box:



You can press on the “X” to dismiss this box, or press “Connect” to have the app try to connect again. If you have hidden the “Not Connected” box, tap on the yellow “not connected” icon or the “Check WiFi Network” message to show the “Not Connected” box again.

Turn Delay Indicator



If the turn delay option is on, you will see this indicator as a reminder. See [Turn Delay](#) on the [Options Page](#) for more information.

Low Battery Indicator



If the system detects that the power supply voltage is low this indicator will be shown. This should only happen when running the system on battery power and the battery voltage is getting low. The lights may begin to behave strangely if you allow the voltage to drop too low. When you see this indicator you should try to shut down the system and recharge the battery as soon as possible.

Main Menu Page

The Main Menu Page of the SwimPacer app is the jumping off point for all other areas of the app. You will return to this page when you want to go to any other page in the app. Tap on one of the big buttons to switch to that page, then press the “Back” button in the upper-left of the screen to go back to the Main Menu page. (On Android devices, you can also press the system back button to go back to the previous page).

The available pages are:

- 📖 **Quick Swim** – quickly set up and run a set in one or more lanes.
- 📖 **Workouts** – define and run a sequence of sets in one or more lanes.
- 📖 **Games/Drills** – use virtual tempo mode and run time-to-distance drills in a single lane.

- ❓ **Pool Setup** – used to set lane lengths and perform self-tests.
- ❓ **Options** – pace clock, RealSwim profiles and other settings.
- ❓ **Sync/Update** – check for and install system software and firmware updates.

Each of the pages are described in detail below.

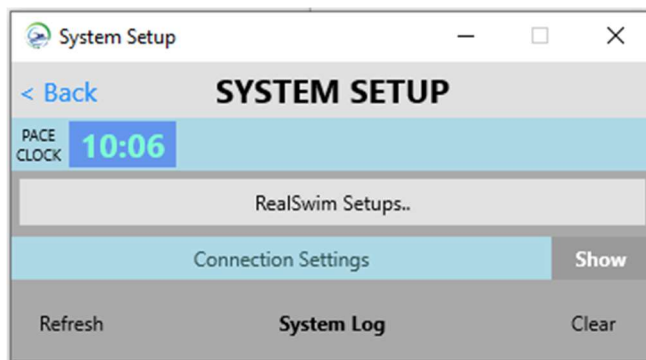
There is also a small “gear” icon in the upper-right corner of the Main Page – tapping on this icon takes you the advanced system parameters setup screen, but these parameters should NOT be changed unless instructed to do so by LumaLanes technical support.

Version Information Bar

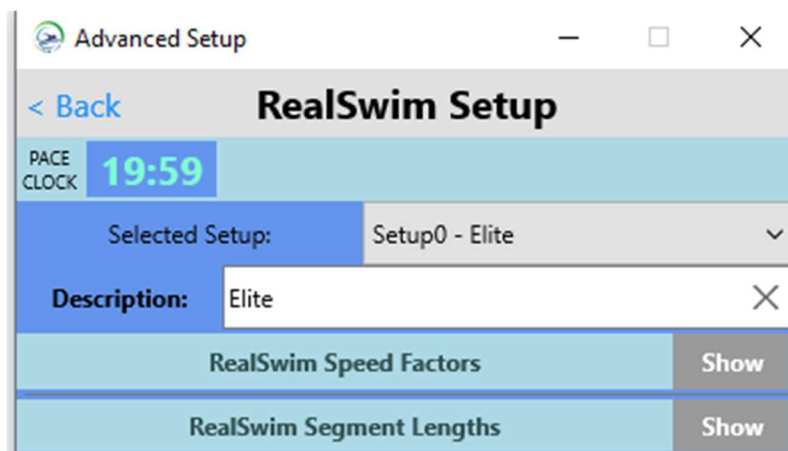
Information about the application version, the control box version and the lane controller firmware versions will be displayed just above the Bottom Status Bar.

RealSwim Page

The RealSwim page is accessed with the gear icon on the Main menu page.



Once selected you have access to the RealSwim settings.



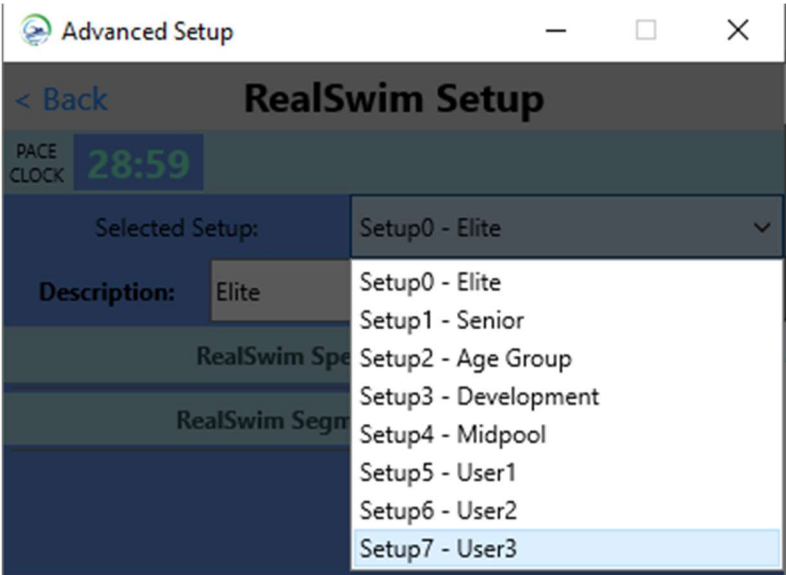
RealSwim® Start Setting

RealSwim is LumaLane’s innovative technology that models real world swim speed and acceleration during each length of the athlete’s swim. When turned on, the speed of the pacing lights will vary during each length: they will move fast at the

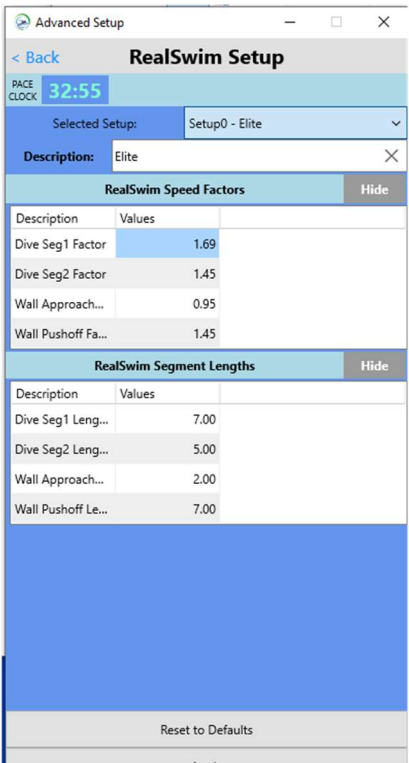
start, then slow down during the middle part of the length, and then slow down slightly as the swimmer approaches the wall.

There are several different RealSwim lane “profiles” that have been pre-programmed into the system. Each profile is designed to model the accelerations of the typical swimmer at a specified level, such as Development, Age Group, Elite or Senior swimmers. See [RealSwim Profile](#) on the [Options Page](#) for information on selecting different profiles.

NOTE: RealSwim must be enabled or disabled prior to the start of a set, and RealSwim settings can only be changed while a set is not running.



The RealSwim presets are used when you want to get up and running quickly.



The User1, User2 and User 3 can be customized in the drop down menus to be fine tuned for a specific swimmer or swimmers.

Quick Swim Page

This page is used when you want to get up and running quickly, when you are just experimenting, or need to modify a workout “on-the-fly”. The main difference between this page and the Workout page is that the Quick Swim page only allows you to run one set at a time, whereas the Workout page lets you define a whole list of sets and automatically run them all.

Tip: The Quick Swim page is an excellent place to learn how to use the lights – if you can master this page and understand all the controls, then the rest of the app will be much easier to use and understand.

The Quick Swim page has the normal Top Control Bar controls and Bottom Status Bar display, and groups of controls for configuring and running a single swim set.

Swimmer Count And Spacing

These controls set the number of swimmers in the lane and the spacing between them.

Swimmers in Lane	4	Start Spacing	5s
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Swimmers in Lane

Use these controls to set the number of swimmers in the lane (from 1 to 8), and the spacing between them (from 5 secs to over a minute). The pacing light for each swimmer is a different color – tap on the “stoplight” icon to see a listing of the color for each swimmer.

TIP: It's often a good idea to set the number of swimmers to more than the actual swimmers that are in the lane – that way, if one swimmer isn't able to maintain the pace they can “drop back” to the next set of pacing lights and continue the set.

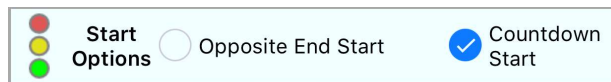
Start Spacing

The Start Spacing control sets the time between swimmers, typically 5 -10 seconds for normal sets. A short spacing between swimmers is helpful when you want to give everyone a chance to go before the lead swimmer finishes.

Advanced Use: A different way to use this setting is if you want the first swimmer to completely finish what they are doing before the second swimmer starts, you can set this control for that amount of time. For example – say you want swimmers to complete a 25 yard sprint and exit at the opposite end of the pool, and you don't want the next swimmer to start until the prior swimmer has exited the pool. Set the start spacing to 15 – 20 seconds depending upon how long you want to give the prior swimmer to swim and exit. Just remember to set your interval for a long enough amount of time to cover the number of swimmers and pace you are selecting. In this case, we'll say 6 swimmers and 15 seconds for the pace. Therefore, we'll need to set the Interval for 1:30 and Pace to 1:15 (6 swimmers X 15secs = 1:30). One important thing to remember – set Reps to 1 or the system will attempt to start the next rep from the opposite end of the pool! Just keep repeating this one set till you are out of swimmers.

Start Options

These controls how the swimmers start each set and rep.



Opposite End Start

Allows you to start the lights from the opposite end of the pool (here “opposite end” means the end opposite where the control box is). In the normal course of setting up reps, you will ignore this control as the system keeps track of where in the pool the swimmers are located. If however you are at the far end of the pool and want to start a set there, check this box, and the lights will start there.

Countdown Start

This controls whether the FIRST swimmer goes through the countdown sequence or not. When turned on (checked), the swimmer will see the countdown sequence right after you press the Start button and then start shortly thereafter. If off (unchecked), then the countdown sequence is skipped and the FIRST swimmer starts right away. All following swimmers will go through the countdown sequence to let them know when to start to maintain proper spacing.

Note: if the Delayed Start feature is being used, then the selected start sequence will happen when the pace clock reaches the appropriate position. See [Delayed Start Buttons](#) below.

Description of the Countdown Sequence

One of the most challenging skills to learn is a proper start. The LumaLanes countdown sequence can help to hone your swimmer's skills. When enabled, the lights will go through the following stages:

- ❑ “Prepare to start” (4 seconds before start) - a stationary light is shown right at the start of the light strip. The color of the light corresponds to that swimmer’s pacing light color. This light will stay on for the rest of the sequence until the countdown reaches 0.
- ❑ “On your mark” (3 seconds before start) - THREE sets of RED “starter” lights are shown just out in front of the swimmer.
- ❑ “Get ready” (2 seconds before start) – TWO sets of YELLOW starter lights are shown just out in front of the swimmer.
- ❑ “Get set” (1 second before start) – ONE GREEN starter light is shown just out in front of the swimmer. The swimmers should NOT LEAVE when the green lights come on – **they need to wait for green light to go OFF and the white starter light to “flash”**.
- ❑ “GO” (time to start!) - the green “starter” light goes off and then a quick WHITE FLASH is shown. This is light is just like the starter gun or the starting lights that are on some starting blocks.

*Hints: It can take some time for swimmers to learn the starting sequence. In our experience they tend to jump the start, which puts them out in front of the lights, making it difficult for them to see and follow the lights. When first starting out it's better to teach them to “follow” the lights and wait for the lights to start moving – they can usually catch up to the lights right away. This is better than getting out in front of the lights and then having look back to find them. **Remind them that they are not racing the lights, they are following them.***

Swim Set Controls

These controls are used to define the distance and pace for the current set. Some settings can be changed “on-the-fly” while the lights are already moving, however others (e.g. the interval and distance) can only be changed when a set isn't already running.

Dist 0x50m	Interval 0:40	-	Pace 0:30.00	+
RealSwim Wall Push	Underwater Off	OFF	Tempo 1.20 sec/cycle	

The RealSwim Start control lets you turn RealSwim on/off and select the type of start being used:

- ❓ **Off** – the pacing lights will move at a constant speed for the entire length of the pool. Handy for kick-board sets.
- ❓ **Wall Push** – the pacing lights will move faster at the start of each length and slightly slower approaching the wall. This is the setting that you will typically use for in-water starts during practice.
- ❓ **Dive Start** – like Wall Push, but the lights will move even faster for longer at the start of the **FIRST LENGTH** of the **FIRST REP** of the set. After the first length, it will function like the Wall Push setting since the swimmer will already be in the water. Use this setting when starting off the blocks.

When you tap on the Distance, Interval or Pace controls a dialog box will pop up with a numeric keyboard for entering in times as shown below.

Swim Interval Entry

Reps:

Distance:

0 (endless set)

50m

Interval

Rest

Pace

Multi

Show

0:40

0:10

0:30.00

pace

Splits

Enter Pace Time [mm:ss.hh]

0:30.00

×

1

2

3

4

5

6

7

8

9

00

0

<-

Enter Hundredths

Cancel

OK

- ❓ **Reps** – tap on this control to set how many repeats you want of each distance in the set. Set 0 for an “endless” set which will keep repeating until you stop it.
- ❓ **Distance** – tap on this control to set the length of each rep. Distances in this dialog are always a multiple of the lane length.
- ❓ **Interval** – tap on this control to set the interval time for the set. The “X” button will clear any values already in the dialog box, but when the dialog box first comes up you can start typing directly and that will also clear the current value.

- ❓ **Pace** – tap on this control to set the pace time for the set. The “X” button will clear any values already in the dialog box, but when the dialog box first comes up you can start typing directly, that will also clear the current value. **The pace time must be less than or equal to the interval time.**
- ❓ **Multipace** – tap on this button to bring up the window where you can adjust the pace times for each swimmer in the lane:

Swimmer	Pace Time
1	0:30.0
2	0:33.8
3	0:36.3
4	0:38.1

Interval: 0:40 Holding: 0:30.0

Reset All

Cancel OK

You can adjust the pace time for each swimmer in the lane by dragging the horizontal track bar, or by pressing on the “<” or “>” to adjust the time up/down by 0.1secs. The pace time for each swimmer can be set individually, but can not be set faster than the swimmer in front of them (no passing allowed), with a maximum pace time (slowest speed) equal to the total interval time. Press the “Reset All” button to reset all swimmers to the

Note: The Multipace feature requires a system with “version 2” lane controllers, so this option will not be available if your system has older controllers. Contact LumaLanes to get an update.

- ❓ **Rest time** – displays the difference between Interval and Pace times. This represents how long the swimmers will be waiting “on the wall” between reps.
- ❓ **Hundredths** – allows you to toggle the display and entering of the pace time to hundredths of a secs. This setting is on by default and will be remembered by the system if you choose to turn it off. Turn this off if you don't need or want to enter pace times to the hundredths of a sec. The timing of the system is accurate to within 0.02secs, regardless of whether this option is on or off.
- ❓ **Show Splits** – press this button to show a listing of the timing for each length of the current interval.

Adjusting Pace Time “on the fly”

On the Quick Swim page, next to the pace time control are “+” and “-” buttons which can be used to make adjustments to the pace time, even mid-set. The amount of time added or subtracted by each press is set by the Pace Time Adjust Increment on the Options Page.

Pace 0:30.00

NOTE: pressing the “+” button will INCREASE THE PACE (make the swimmers go faster) and thus DECREASE the pace time, while pressing the “-” button will DECREASE THE PACE (make the swimmers go slower) and thus INCREASE the pace time.

Underwater Indicator Control

The Underwater Indicator shows your swimmer the distance you would like them to remain underwater off each wall. The indicator is a BLUE light which appears just ahead of the swimmer's pacing light as they come off the wall (or off the blocks in a dive start) – the BLUE light will TURN GREEN ONE METER BEFORE the point where the swimmer should come to the surface.

This distance is adjustable from 1-15 meters. The underwater indicator can be turned on or off mid-set and distance underwater can be adjusted at any time and can be different for each lane.

Tempo Indicator Control

The Tempo Indicator gives a visual indicator to show the stroke or kick rate that you would like your swimmers to maintain. The tempo indicator is a WHITE FLASHING light which appears just ahead of each swimmer's pacing light, flashing at the rate you specify. The tempo indicator settings can be changed at any time, even mid-set.

The Tempo Indicator rate can be set using any of three units – Cycles/Minute, Seconds/Stroke or Seconds/Cycle. The units are set using the [Tempo Mode](#) control on the [Options Page](#).

You can also use the Tempo Indicator by itself without any pacing lights – see [Virtual Tempo Trainer](#) on the [Games and Drills Page](#).

Copying Sets To Other Lanes

Tap on this button and then select which lane(s) you want to copy the current set to – all settings in the selected lane(s) will be overwritten.

Use this feature to quickly copy all current settings to other lanes. When you select this control you will be presented with a dialog that let's you select which lane(s) you want to copy the current settings to. The current lane will already be checked and can't be unchecked. The data that will be copied includes:

- ☒ Number of swimmers in the lane
- ☒ Start spacing
- ☒ Any selected Start Options
- ☒ Distance, Interval, and Pace settings
- ☒ RealSwim, Underwater, and Tempo settings.

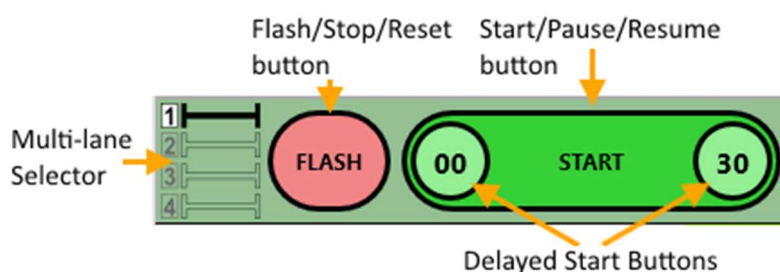
NOTE: The most important thing to remember when using the “Copy Set to Other Lanes” control is to get all settings configured how you want them first, THEN copy them to the other lane(s). Once the copy is complete, you can then use the [Lane Select Control](#) to switch to the other lane(s) and make changes such as intervals, pacing, etc.

Saving And Recalling Sets

In the upper-right corner of the screen is a “folder” icon – tap on this to access the save/recall dialog box. You can also edit a saved set and delete saved sets. Editing a saved set doesn't affect the currently loaded/running set, but if you recall a set it will overwrite the currently loaded set.

Controls For Starting And Stopping Sets

These are the key controls for starting, pausing and stopping the lights.



Multi-lane Selector

If you have multiple light strips, you can use this control to start multiple lanes at exactly the same time. Just tap on the control and select which lanes you want to control – from then on, whenever you press the Start/Pause/Resume or Reset/Flash buttons, it will affect ALL the selected lanes. Each lane will start and run whatever workout or set is currently loaded in that lane.

Flash/Stop/Reset Button

This control has different functions depending on what the strip is currently doing. When a set is currently running, the button will display “Stop” and pressing it will abort the current set. If there is no set running it will display “Flash” and when pressed the light strip will flash WHITE. Think of this as a “Recall” button for when you want to get the swimmers to stop, and pay attention to you. If the strip is already flashing, then the button will display “Reset” and pressing it will turn off the flashing.

Start/Pause/Resume Button

If a set is not currently running, then this button will display “Start” and when pressed the current set will start right away (if the countdown start is enabled, then the countdown sequence will be initiated and then the swimmers will start). If a set is already underway, this button will show “Pause” and pressing it will pause the current set and all the lights will stop moving and any countdown sequences will be paused. If the set is already paused, then the button will display “Resume” and pressing it will cause the set to resume and pick up right from where it left off. This can be handy if the swimmers have fallen behind and need to catch up.

Delayed Start Buttons

If you would like to start in sync with the app’s pace clock there are two special buttons labeled “00” and “30”. If you press the “00” button, the set will automatically start the next time the pace clock *seconds* are at the 0 mark (second hand straight up, or “on the top”). Pressing the “30” button will cause the set to automatically start the next time the pace clock seconds are at the 30 mark (the second hand straight down, or “on the bottom”). You will also see the 00 or 30 button turn into a countdown clock that shows that you have activated the delayed start control and how long until the first swimmer starts.

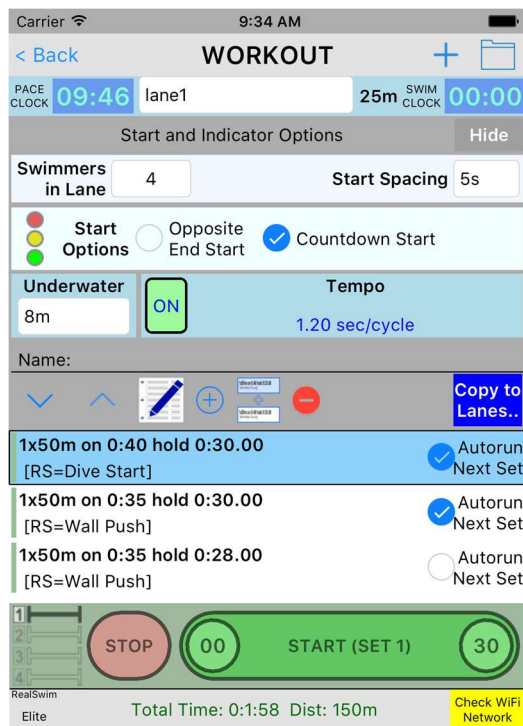
NOTE: There is a five second lock-out when using the 00 and 30 start options. The system needs to take into account the “Countdown Start” so if you press the 00 or 30 start buttons within 5 seconds of the next top or bottom, the system will automatically pass this top or bottom, and start on the next top or bottom. Also, when inside of the final few seconds before a delayed start, all start controls are locked out. If you need to abort the start just tap again on the 00 or 30 button.

Rep Counter

After you start a set, the Rep Counter will become visible at the bottom in the middle of the Bottom Status Bar. It lets you know what length and what rep the lights (and your swimmer) are currently on. The length count shown is for the lead swimmer on the current rep.

Workout Page

This page is used to set up a sequence of pre-programmed swim sets which can be automatically executed in sequence, enabling you to define a whole workout, press the Start button and then put the phone away. However you'll probably find that you will typically use a combination of both the Quick Swim page and Workout page during a workout. Quick Swim mode is ideal for when you need to make adjustments "on-the-fly" or just want to do one set at a time, while workout mode is great for distance workouts, training for relays, negative splitting and when you want to concentrate on the swimmers and just let the system run the workout.



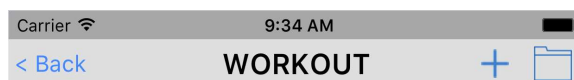
Workout mode requires some preparation – while you can set up a workout pretty quickly, **it's best if you take the time to enter the workout into the phone (or PC) beforehand**. You can do this without being connected to the system – you don't even have to be at the pool. You can enter in all the sets for the workout and even save multiple workouts, then recall them when you get to the pool, connect to the system and start the workout.

You can also create all the workouts on another phone or PC and use the Cloud Sync feature to transfer the files between devices. See [Save/Recall Files in the Cloud](#) for more information.

The controls on the Workout page are very similar to the Quick Swim page, the main difference is that in the middle of the page is a list of sets and some controls for editing and arranging the sets. These controls are described below.

Creating A New Workout, Saving Recalling Workouts

In the upper-right of the workout page are two buttons used to manipulate workouts:



The "+" button is used to create a brand-new, empty workout. If you already have a workout loaded you will be asked if you want to save it first. You will be asked for a name for the workout – give it any descriptive name you wish.

The button with the “folder” icon is used to recall or save the workouts. You can also delete a previously saved workout if you wish.

Start Options

Similar to the Start Options controls on the Quick Swim page, with the exception that there is no RealSwim start setting, because that is controlled by each of the individual sets. In addition there is a “Hide/Show” button which toggles the display of the start options – hiding them can make more room on the display to see more sets.

The key thing to keep in mind is that these controls are setting the start options for the entire workout, so be sure to set the number of swimmers and the start spacing carefully.

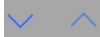





The Opposite End Start setting only applies to the first set of the workout – once the workout is underway, the system keeps track of which end of the pool the swimmers are on, and starts the next rep or set at that end.

The Underwater and Tempo settings apply to the entire workout, but can be changed “on-the-fly” at any time, even mid-set.

Set List Toolbar

Just above the set list is the “set list toolbar” that is used to manipulate the set list. Each control is described below, from left-to-right. Some controls will be disabled (grayed out) if you don’t have any sets loaded or don’t have a set selected, and they are all disabled while a workout is running.



Icon	Description
	Use these buttons to move the selected set up or down in the set list order. Tap on a set in the list to select it.
	Tap on this button to edit the selected set. You can change the set distance, interval, pace (and Multipace) and RealSwim settings.
	Tap this button to add a new set to the workout. You can recall an existing saved set or create a new one.
	This is the “clone set” button – when you tap on it it will make an exact copy of the currently selected set. This is useful when creating negative splits – just load one set with the desired “base” interval and pace, then “clone” it and adjust the pace time in the cloned copy.
	Removes the selected set from the workout list. Doesn’t delete the set if it’s been saved, just removes it from the workout.
	Copies the entire workout to another lane(s). You can copy a workout to another lane, then switch to that lane and edit the workout for that lane if you want that lane running the same basic workout, but perhaps at a different pace.

Set List

Below the toolbar is the set list itself, showing all the currently loaded sets for the workout. In addition to showing the RealSwim (RS) setting, the reps, distance, interval and pace times, there is also a checkbox that lets you select the “Autorun Next Set” option.

1	1x300m on 5:00 hold 4:40.00 [RS=Wall Push]	<input checked="" type="checkbox"/> Autorun Next Set
2	3x100m on 1:40 hold 1:25.00 [RS=Wall Push]	<input checked="" type="checkbox"/> Autorun Next Set
3	6x50m on 0:55 hold 0:40.00 [RS=Wall Push]	<input checked="" type="checkbox"/> Autorun Next Set

Autorun Next Set

Tap on a set in the list to select it, and then you can tap on the “Autorun” checkbox to turn this option on/off for the selected set. If the Autorun option is ON, then when each swimmer finishes all the reps and the rest time for the selected set, they will automatically start on the next set. This means that when the workout is underway the lead swimmers can be on a different set than the following swimmers.

If Autorun is OFF, then the selected set will run normally and all swimmers will stop at the end of that set. You will have to select the next set and press the Start button to start it.

Making A Relay Race Set

The Autorun option can be used to put together a workout that simulates a relay race – just make each leg of the race its own set, with the interval time equal to the pace time (so that the rest time is 0), then turn on the Autorun option for each leg. Each set can have a different pace, such as you’d have in a medley race.

The same approach can be used to put together an individual swim with varying paces during each leg of the swim.

Making A Set With Varying Pace, Or Negative Splits

You can break the sets down into smaller segments if you want to specify a different pace time for each segment – a segment can be as short as one length. This way you can define negative splits, where each subsequent set is a little faster than the previous one. Just remember to make the Interval time equal the Pace time and enable the Autorun option if you want the sets to be swum “continuously”, without stopping between them.

Workout Summary/Status Display

When you have a workout loaded then the middle of the bottom status bar will show the statistics for the current workout, including the total time and distance. When the workout is underway, this will change to a display showing the current set number, rep number, and length that the LEAD SWIMMER is on.

Workout Start/Stop Controls

Similar to the [Controls for Starting and Stopping Sets](#) on the Quick Swim page, the Start/Stop and Multi-lane selector controls near the bottom of the page are used to start and stop a workout. **Be sure that the correct set is selected before starting the workout.** Also note that **once a workout is started, you cannot pause it**, you can only stop it. This is because workouts are downloaded to the control box and once started, they run independently on the lane processors.

You can use the [Multi-lane Selector](#) to start multiple lanes at the same time, but keep in mind that each lane will run whatever workout or quick swim set is currently loaded on that lane.

Games And Drills Page

This section is the landing page for all current games and future ones that will be added. You can do something different in each lane by using the Lane Select control at the top of the page to control the active lane.

Time To Distance

Great game for testing a swimmer's ability to cover a certain distance in a preset amount of time. Default setting is a very challenging Olympic standard of 15 meters in 5 seconds. You can set any distance and time you'd like, and also set RealSwim to the particular start you are using, and you can also start mid-pool for practicing the final push to the wall at the finish of a race.

Countdown Start

Toggles the "Countdown" start on/off. If turned off, it gives the Coach the ability to "Start" with a voice command and press the start button at the same time – the lights will then leave immediately; otherwise the lights will start after the normal countdown sequence.

Mid-Pool Start

When selected, this option sets the lights to start mid-pool, away from the wall, at the specified distance. The lights will then move towards the wall, covering the distance in the specified time.

Opposite End Start

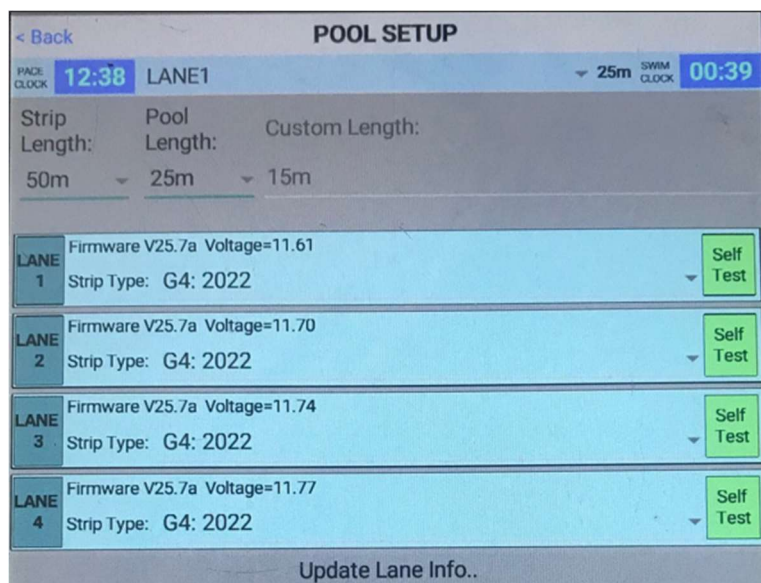
Allows you to start the lights from the opposite end of the pool. When mid-pool start is selected, this controls which end of the pool the lights will head for.

Virtual Tempo Trainer

This mode uses the entire strip as a "strobe" light, flashing at whatever tempo you set. No pacing lights will move up/down the strip in this mode. It is useful for working on stroke or kick rates without worrying about setting a distance or pace.

Pool Setup Page

This page is used to set lane lengths, perform self-tests, and check the status of the lane controllers. For systems that have not had the software updated you will only be able to set the strip length.



LED Strip Length Setting

Configures the system for the length of the LED strip you are using. This is the length of LED strip you purchased and only needs to be set once.

Pool Length Setting

This length is used by all lanes, and defines the available swim set distances (all distances are multiples of the base lane length). For normal use you should set this to the actual length of your pool and light strip. Lane length selections are 25 yards, 25 meters, 33.33m, 50m and Custom.

Using a Short Course Strip in a Long Course Pool

The system doesn't "know" the physical length of the light strip, so you do need to set it properly for normal use. However, you can "fool" the system into thinking you have a longer strip than you actually do, which can be useful if you are using a pool that is longer than your strip.

For example, if you are at a long course pool (e.g. 50 meters) and only have 25 yard or 25 meter long strips, you can still use the system to pace swimmers for half of each length. Place the strips at one end of the pool and set the lane length to 50m, and configure your workouts for that length. The system will run the lights as if you had a 50m strip and the swimmers can follow the lights for half of each length then swim "on their own" for the remaining distance, then pick up the lights again as they come back down the lane. This can be a good way to train swimmers to learn to maintain a pace on their own.

Custom Length

The Custom feature allows you to conveniently run a shorter pool length with a longer LED strip. The starting point is adjusted accordingly, so you will pull out what you need out of the bag. Custom length only becomes active if you have set the Lane Length control to "Custom". At that point you are able to type in any lane length you'd like. The length must be followed by either the letter "y" for yards, or an "m" for meters. Examples: "10m" for 10 meters, or "15.5y" for 15.5 yards.

Strip Type Selection

Currently there are four different types of strips which can be used with the LumaLanes system:

- ❓ Generation 1 (G1) strips were supplied with the first systems starting in 2014. They were supplied as a single piece, but some had connectors on the ends so they could be extended. They have a gray control cable.
- ❓ Generation 2 (G2) strips were supplied from 2017 until September of 2019. They were “modular” and were built of multiple 5 meter long segments which could be connected together to make strips up to 50m long. They have black control cable.
- ❓ Generation 3 (G3) strips are supplied with all new systems starting in October of 2019. They are constructed as a single-piece, up to 50m long. Custom configurations with extendable “tail” pieces are also available.
- ❓ Generation 4 (G4) strips are supplied with all new systems starting in August 2022. They are constructed as a single-piece, up to 50m long.

Different types of strips can be used on the same system, but the strip type selection for each lane must match the strip that is plugged into that lane. If the wrong strip type is selected nothing will be damaged, but the strip may not work properly.

Lane Controller Status Indicators

There is a rectangular box for each lane, showing information about the lane controllers, such as firmware version and voltage information. This information may be helpful if you need to get technical support.

Self Test Button

The Self Test button will fire the LED test sequence down the entire length of the LED strip to make sure it is functioning properly.

Options Page

Use this page to set various system options.

Turn Delay

When working with young age groupers, and also when you are working with a mid-pool turn, it is sometimes very handy to have the pacing lights do a short delay on each turn, to ensure it doesn't get ahead of the swimmer too much. The Turn Delay Indicator will be displayed in the bottom left corner of your phone showing that the Turn Delay function is active. In practice we have found for a mid-pool turn about 1.5 seconds of delay will enable the average swimmer to get turned and back up to speed to stay with the lights.

The turn delay doesn't affect the pace of the interval, it just adds an additional “pause” at the turns. For example, if you have a swimmer holding a 30 second 50 with a one second turn delay, the swimmer will still swim a 30 second 50 but the lights will be off for one second at the wall/turn.

Pace Clock Rollover

This sets whether the app's pace clock rolls over to 0 when it reaches either 60 minutes or 100 minutes. Set this to match the behavior of the pace clock at your pool if you are trying to keep the app's pace clock in sync with the pool's clock.

Pace Time Adjust Increment

In the Quick Swim page, you can adjust the pace time setting of the currently active set by pressing the “+” or “-” button next to the pace time control (see [Adjusting Pace Time “on the fly”](#) for more). This control lets you select how much the pace time is adjusted each time you press one of the buttons.

Tempo Mode

Tempo Mode allows you to set the Tempo Indicator to work in the units you are most accustomed to, whether it is Cycles/Min, Secs/Cycle, or Secs/Stroke.

Color Mode

Color Mode allows you to set the system in either Indoor (system default) or Outdoor mode. When using Outdoor mode ALL LEDS will be red for the highest visibility, so all swimmers will have a red pacing light and will need to know their place in the lane. When using Outdoor mode under direct sunlight, it can be helpful to have the swimmers wear red-tinted goggles to make the lights more visible.

RealSwim Profile

RealSwim is used to model the speeds of the swimmers at different points during each length so that the lights match the swimmer’s expected pace at any point. Since not all swimmers go at the same pace, and there can be big differences in how an Olympic-level elite swimmer accelerates off the wall and how a young age-group swimmer accelerates. To accommodate these differences there are several different “profiles” built into the SwimPacer app which have been developed to model the accelerations of different types of swimmers. The following profiles are available:

- ❑ Elite – national and internationally ranked level swimmers. Starts are VERY fast and maintain a high speed for a long ways down the length!
- ❑ Senior – a little slower and starting speeds aren’t maintained for quite as long. For competitive, accomplished and fit swimmers.
- ❑ Age Group – a little slower than seniors.
- ❑ Development – for newer swimmers or those whose technique isn’t quite as honed.
- ❑ Mid Pool – this is a special-purpose profile for when using the Time-to-distance drill or another situation where swimmers are treading water at the start and accelerate very slowly at the beginning.
- ❑ User defined profiles – custom user-defined profiles. Defining a custom profile is an advanced feature that should only be used under instruction from LumaLanes as incorrect settings could cause timing errors or other problems.

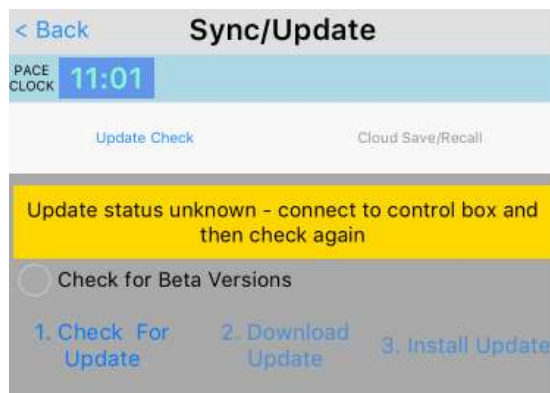
Select the profile that you think should best match your swimmers.

Sync/Update Page

From this page you can check for updates to the control box software and firmware, as well as copy workout and swim set files to/from the “cloud” (a location on the Internet where files are stored). Updates to the Swim Pacer app itself are not available here – you still need to go to your device’s app store to get updates like any other app.

Checking For Updates

The Sync/Update page has two ‘tabs’ – select the first tab (named ‘Update Check’) to access the update check feature:



The current version numbers of the firmware (FW) and control box software (called the “Server”) are shown near the bottom of the screen. If you have never connected your phone to the control box, then the version information will show a “?” and you will see an “Update status unknown” message. You need to connect the phone to the control box at least once for the phone to get the version information from the box.

Update Procedure

To check for updates, follow these steps:

1. Turn off the control box so that your phone isn’t connected to it over WiFi anymore.
2. Connect your phone to the Internet (over WiFi or your phone’s cellular data connection). An Internet connection is needed to get the update files from the LumaLanes “cloud” server.
3. Open the SwimPacer app and go to the “Update Check” tab of the Sync/Update page – you will see the “Check WiFi Network” indicator at the bottom of the screen since you are not connected to the control box’s WiFi. The “Install Update” button will also be grayed out.
4. Tap on the “Check for Update” button and wait a moment for the app to get the update information from the Internet.
5. You will see a yellow message if your system is out-of-date and needs updating; otherwise it will show the green “System is up-to-date” message and you can skip the rest of this procedure and reconnect your phone to the control box.
6. If you see the “System needs updating” message, then press the “Download Update” button and wait for the app to download the update from the Internet to your phone. The update files are typically not very large (usually less than 1MB).
7. Now turn on the control box and wait for it to fully initialize, then connect your phone to the control box’s WiFi. Refer to [Connect to the LumaLanes control box WiFi](#) section as needed. You may have to exit the SwimPacer app to use your phone’s “Settings” app to make the connection – if so, when you come back to the app be sure to reconnect to the control box.
8. You should now be able to press the “Install Update” button – this will automatically transfer the update files that you downloaded in step 6 to the control box and start the update procedure on the box. The SwimPacer app will be automatically disconnected from the control box at this time.
9. During the update procedure the status light on the control box will turn off and may flash or turn on/off a few times. **When the update is complete, the status light on the control box will slowly flash GREEN.** It can take

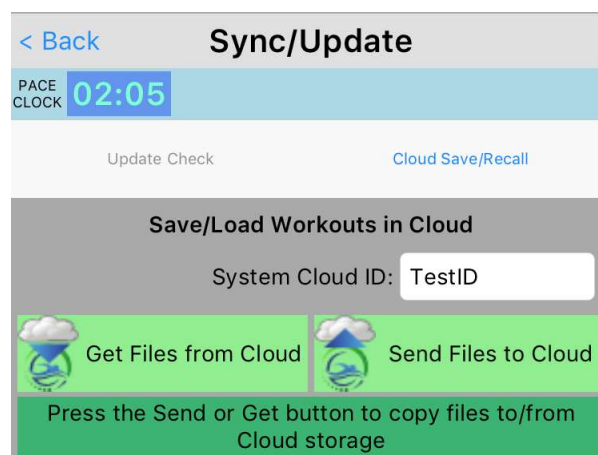
several minutes for the update to complete (after all there are four or more processors to be updated), so **please be patient.**

10. Once the update is complete, power off the control box, wait a moment and then power it back on and wait for it to initialize. The system should now be ready to use!

Save/Recall Files In The Cloud

Normally all the workouts and swim set files you create are stored on whatever device you are running the SwimPacer app on, and if you want to use a different device you'd have to recreate those files on the new device. However, by using the "Cloud" to save and recall files, you can easily transfer files between devices. This is particularly useful if you use the PC version of SwimPacer on your Windows or Mac PC, since it allows you to create/edit workout files on the PC and then send them to your phone for use at the pool. Files can be transferred both ways – both to and from the Cloud storage.

Click on the "Cloud Save/Recall" tab to access the file transfer screen:



Cloud ID

To uniquely identify each user and thus keep their files safe and separate, you need a LumaLanes "Cloud ID". If you don't know your system's Cloud ID, contact LumaLanes (email support@lumalanes.com) and we'll send it to you.

Saving/Recalling Files To/From the Cloud

Because you need to have an Internet connection to use the Cloud, you can only use this feature when NOT connected to the system control box (the system control box is a WiFi "hotspot", but it doesn't have a connection to the Internet). So before using the Cloud feature you'll need to make sure your device is connected to the Internet via WiFi or a cellular data connection. The amount of data used by the Cloud feature is pretty small (most workout files are only a few kilobytes).

Click on "Get Files from Cloud" to download all the swim sets and workouts which are stored there. You can then use any of these sets or workouts in the QuickSwim or Workout pages by recalling them, just like any other saved set or workout.

Click on "Send Files to Cloud" to upload all the swim sets and workouts which are saved on your device to the cloud storage.

Note: if you delete a file on your device, and then use the "Send Files to Cloud" button, the file will also be deleted from the cloud storage.

LANE SIMULATOR SOFTWARE

For Windows and Mac PCs the Lane Simulator software can be used for learning to use the SwimPacer app and to visualize how it will look at the pool and can be used to test out workouts. The SwimPacer app will look and function almost the same on the PC as it does on your smartphone or tablet. It is even possible to control the system from your PC or Mac.

A separate manual for installing and using the lane simulator is available – please contact LumaLanes to obtain it.

WARRANTY INFORMATION

The following pages contain information which is not particularly interesting, but is important! Please take a few moments to review it.

Hardware Specific Warranty

LumaLanes LLC, Inc. (Herein called "LumaLanes") warrants the hardware described herein and manufactured by LumaLanes to be free from defects in material and workmanship for a period of TWO (2) YEARS LIMITED WARRANTY from date of shipment by LumaLanes, under normal use and service, its sole obligation under warranty being limited to repairing and replacing, (as hereinafter provided) at its option, any product found to LumaLanes' satisfaction to be defective upon examination, provided that such product shall be returned for inspection, freight prepaid, to LumaLanes' factory within 30 days after discovery of the defect. The repair or replacement of defective products will be made without charge for parts or labor.

This warranty shall not apply to any product which has been subjected to abuse, negligence, accident, improperly deployed, or misapplication, or to any product which shall have been altered or repaired by others than LumaLanes, nor to normal maintenance services and the replacement of service items (such as, but not limited to: gaskets, lubricants, etc.) made in connection with such purchases.

This limited warranty does not cover problems caused by improper maintenance, storage, normal wear and tear, misuse, neglect, accident, corrosion, electrolysis, or improper operation.

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, LUMALANES DISCLAIMS ALL OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED, ARISING BY OPERATION OF LAW, COURSE OF DEALING, CUSTOM AND PRACTICE OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. This limited warranty gives the purchaser specific rights that vary from state to state or from jurisdiction to jurisdiction.

To the maximum extent permissible by applicable law, in no event shall LumaLanes be liable for any damages whatsoever (including, without limitation: special, incidental, consequential or indirect damages for personal injury, loss of business profits, business interruption, loss of business information, or any other pecuniary loss) arising out of the use or inability to use the products described herein, even if LumaLanes has been advised of the possibility of such damages. Because some states or jurisdictions do not allow the exclusion of limitation of liability for consequential or incidental damages, the above limitation may not apply to the purchaser.

THE BUYER ACKNOWLEDGES THAT NO OTHER REPRESENTATIONS, AGREEMENTS, GUARANTEES, OR WARRANTIES, WRITTEN OR ORAL, WHICH ARE NOT EXPRESSED HEREIN, WERE MADE TO HIM OR HER OR RELIED UPON BY THE BUYER WITH RESPECT TO THE QUALITY, COMPOSITION, DESIGN, AND FUNCTION OF THE GOODS.

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License Restrictions Warranty/Consequential Damages Disclaimer

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Warranty Disclaimer

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

CONTROL BOX SPECIFICATIONS

Voltage: 12V

Current Max: 6 amps

Weight:

Size: 10.67 x 9.75 x 4.86 in (27.1 x 24.8 x 12.3 cm)

The control box is fully fused and should any of the light strips short out and try to draw more current than it's designed for, the fuses will trip and cut off the power. (The fuses will automatically reset after they cool off).

The control box runs on a 12 volt integrated battery and can also run on an external battery or the AC power supply.

INTERNAL INTEGRATED BATTERY

Proper Use

The integrated battery, secured in the lid of the control box and run 1 LED strip for 7 ½ hours or 4 lanes for almost 2 hours. The battery charger, contained in the small orange bag on the control box handle, plugs into the side of the control box. It will charge a completely dead battery in 4-5 hours.

Before first time use you must open the lid and turn the battery power switch on. The switch is located near the end of the battery enclosure.

Before long term storage it is highly recommended that you fully charge the battery, before turning the battery off and storing.

OPTIONAL EXTERNAL BATTERY

Proper Use

For older systems that do not have an integrated battery an External Battery can be purchased. It plugs into the DC power connection on the control box and works like the Integrated Battery.

AC POWER SUPPLY

Proper Use

Older control boxes use an AC power supply to run the control box. These systems were designed for use with an AC power supply and can be around swimming pools if plugged into a working GFCI outlet.

The AC power supply can be used in parallel with the Integrated Battery in cases where there is a long workout or for more permanently installed installations.

Pool electrical installations must be done according to the electrical code in your area—and usually must be installed by a licensed electrician. The following are just a few of the most common code requirements from the National Electrical Code (NEC). Local rules may vary, although they generally follow the NEC fairly closely.

Note: These rules are current as of the 2017 edition of the NEC—a coding standard that is updated every three years. While changes to the Code are gradual, it is always a good idea to check on the requirements of the latest edition of the NEC. Your local building inspector can let you know what the most current guidelines are for electrical safety around pools and spas. These are covered in article 680 of the NEC code.

The LumaLanes system is a 12 volt DC system, which is considered a very safe voltage by OSHA and the federal government (electrical guarding requirement at 29 CFR 1910.303(g)(2)(i) apply to voltages below 50 volts DC). In addition, the LumaLanes power supply that plugs into the GFCI outlet is waterproof and has internal short-circuit and overload protection meeting all UL, TUV and CE requirements.

Electrical Outlet Receptacles

The rules for electrical outlets are aimed at preventing the possibility of shock:

- ❑ Receptacles for pumps and motors must be located between 6 and 10 feet from the pool walls, and they must be GFCI-protected and locked.
- ❑ Outlet receptacles for general use can be no closer than 20 feet from a pool or in-ground spa if they are not GFCI-protected, and no closer than 6 feet away if they are GFCI protected.

GFCI Protection

Most devices and equipment serving pools or spas and the surrounding areas must be protected by ground-fault circuit interrupter (GFCI) devices. This includes but is not limited to:

Outlet receptacles within 20 feet of a pool or spa

- ❑ Underwater pool lights greater than 15 volts
- ❑ Motors and controls for pool covers
- ❑ Outlet receptacles for pool pump motors at all distances from the pool
- ❑ Light fixtures less than 10 feet from a pool or spa edge, unless the fixture is more than 5 feet above the water level

The power supply that plugs into the mains is waterproof and has internal short-circuit and overload protection, and meets all UL, TUV and CE requirements. To ensure safety the outlet that you plug the power supply into should be outside the splash zone, and be equipped with a GFCI (ground fault circuit interrupter) -- Your pool should be equipped with outlets that meet these requirements. We have tested these power supplies by dunking them in a bucket full of water and running the system with no issues.

1. Place the power supply in a safe location, outside the splash zone, near a GFCI-protected outlet. Check with your pool manager to make sure the outlet you are using is safe!
2. Decide where to place the control box. It needs to be close enough to a power supply for the power cord to reach, and close enough to the pool for the light strip cable to reach.

3. Place the light strips on the bottom of the pool, and use the weights to hold them in place. The light strips can then be connected to the control box.
4. Make sure the power switch on the control box is OFF, then connect the 12 Volt power cable between the power supply and the control box.
5. Plug the power supply's AC cord into a GFCI-protected outlet.
6. Turn the control box ON and wait for it to complete initialization (green status light).
7. Connect your phone or tablet to the control box's WiFi and launch the SwimPacer app.