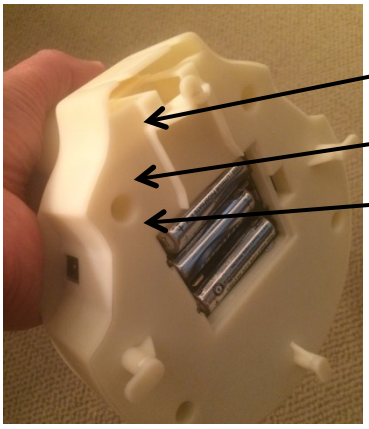
- **How to Install the Batteries**
  - **How to Hold the Lamp:**
    The InteliEnergy Lamp selection switches utilize the same technology as cell phones: Capacitive Touch. This assures the ultimate in longevity because there are no moving parts or electrical contacts to wear out. For assured best performance, each unit self-calibrates all aspects of the Capacitive Touch feature each time power is applied to the lamp. So, when batteries are being installed (or power is being plugged in without batteries already installed), it's important that fingers and hands are away from the switches. As a result, hold the lamp by its arm so that fingers are away from the light switches as the batteries are being installed or as power is being plugged in.
  - 
    
  - **Which battery gets installed first?** During the installation of the batteries, it is best to go by the numbers on the battery cover so the batteries are properly identified.



- **What type of battery can be used?**
  InteliEnergy Lamps can auto sense and adapt to any battery type that is being installed. Any battery type in the AA/14500 size package can be used. This includes:
    - Lithium Iron Phosphate ($LiFePO_4$ or LFP) at 3.2V: rechargeable and recommended for highest performance, the battery included with your purchase.
    - NiMH at 1.2V: rechargeable and recommended for lowest purchase expense.
    - NiCad at 1.25V: rechargeable but not recommended due to obsolescence.
    - Alkaline or Lithium at 1.5V (will power lamp, but are not rechargeable).
    - Li-Ion at 3.7V: rechargeable but not recommended due to less performance.

  The lamp automatically identifies the type of battery as they are being installed, and then applies the optimized charge algorithm for that battery type to maximize the overall life of the battery. If non-rechargeable batteries are installed, the lamp will function but the batteries will not be charged when power is plugged into the lamp.

- **What do the status lights mean as the batteries are being installed?**
  The InteliEnergy Lamp has many diagnostic features regarding the health and operation of the lamp.
    - When installing **NiMH batteries (1.2V)**
        - First and second battery, no status LIGHT will come on.
        - Third battery installed,
            - All three status lights will turn on and off during the initialization of the microprocessor.
            - Then, green status light will come on and will blink based on the charge of the battery (see section below).
    - When installing **Alkaline or Lithium (fully charged at 1.5V)**
        - First battery, no status light will come on.
        - Second battery,
            - All three status lights will turn on and off during the initialization of the microprocessor.
            - Then, green status light may come on, blinking.
        - Third battery, red status light will come on and green will be solid (meaning that the lamp will operate but batteries cannot be recharged).
    - When installing **Alkaline or Lithium (1.5V, partially or fully depleted).**
        - First battery, no status LIGHT will come on.
        - Second battery,
            - All three status lights will turn on and off during the initialization of the microprocessor.
            - Then, green status light may come on, blinking.
        - Third battery, red status light may not come and green will be blinking (lamp will operate). When power is plugged in, the batteries may start to charge but after a short time the batteries will be classified as non-rechargeable and the red status LIGHT will come and the green LIGHT will be solid, and charging will stop so that batteries and lamp are not damaged.
    - When installing **LFP (3.2V)**
        - **First battery**,
            - All three status lights will turn on and off during the initialization of the microprocessor.
            - The green status light will be on and will blink. This means that one LFP installed in the lamp can be charged (see Equal Charge).

        - **Second battery**, the red status light will be on and green status light will be solid. This means that the lamp will operate but the batteries cannot be charged when there are only two batteries installed.
        - **Third battery**, green status light will be on, showing that the batteries are properly installed and ready for operation. It will be solid, or blinking depending on the amount of charge in the batteries (see below).
    - When installing **Li-Ion (3.7V)**
        - **First battery**,
            - All three status lights will turn on and off during the initialization of the microprocessor.
            - Then the green status light will be on and blink. This means that one Li-Ion installed in the lamp can be charged (see Equal Charge).
        - **Second battery**, the red status light will be on and green status light will be solid. This means that the lamp will operate but the batteries cannot be charged when there are only two batteries installed.
        - **Third battery**, the green status light will be on, showing that the batteries are properly installed and ready for operation. It will be solid, or blinking depending on the amount of charge in the batteries (see below).

- **What happens if I put a battery in backward?**
  Nothing at all. The battery holders prevent electrical contact of the battery if they are put in backward so no status lights will come on and nothing will be damaged.

- **What if I put batteries of different types into the unit?**
  InteliEnergy Cordless-Battery Lamps are so intelligent that they can sense when different types of batteries are being installed. After the batteries are installed, the red status light will be on and the green status light will be solid, letting you know that something is wrong with the batteries and that they will not be charged. AND the lamp will be able to operate, so in emergencies, the lamp will function even when the proper batteries are not installed.

- **What are the recommended batteries and why?**
    - **LFP (3.2V)** – The battery that is provided with the unit. LFP batteries provide the best performance but are the most expensive and not readily available in stores.
        - Operates the lamp for 4 hrs. on high, 8 hrs. on medium, 18 hrs. on low.
        - Allows for fastest recharge, 3 hrs. in full to medium amount of sunshine with a 5W solar panel or wall plug adaptor.
        - LFP batteries can be recharged many hundreds of times providing years of service in the lamp.
        - USB devices can be charged directly from LFP batteries, without power being plugged into the lamp, but this does decrease that amount of time that the lamp will operate on battery power. (See section below)
    - **NiMH (1.2V)** – The least expensive and easiest to purchase rechargeable battery.
        - Operates the lamp for 4 hrs. on high, 9 hrs. on medium, 23 hrs. on low.
        - Recharges relatively fast, 5 hrs. in full to medium amount of sunshine with 5W solar panel or wall plug adaptor.
        - NiMH batteries recharge a few hundred times, so when the lamp is used every day, the batteries will have a useful life of about a year.
        - USB devices can only be charged when power is plugged into the lamp.

- **What do the status Lights indicate?**
  InteliEnergy Cordless-Battery Lamps provide a lot of information about the functioning of the lamp through the status lights. In general, the green status light gives indications about the batteries, and the yellow status light gives an indication of the amount of power plugged into the lamp, and the red status light means something is not right.
    - **Green** – Battery charge level (no power plugged into lamp).
        - Solid means they have a charge of 80% or more.
        - Medium blink means the charge is between 20% to 80%.
        - Fast blink means the charge is less than 20% and there some urgency to recharging the batteries.
    - **Yellow** – Power level from wall plug adaptor or solar panel.
        - Solid means there is full power available from the solar panel or wall plug adaptor. When using the wall plug supplied with the lamp, the yellow status light will always be solid with the wall plug adaptor plugged in.
        - Medium blink means there is limited power from the solar panel (perhaps it is partially in shade). Charging is still occurring but less power is available. The USB port will NOT operate when the yellow status light is blinking.
        - Fast blink means there is very little power from the solar panel and needs to be moved, or the sun as set too low in the sky. The USB port will NOT operate when the yellow status light is blinking.
        - Off means that no power is plugged in.

    - **Red and Green** – The batteries are either not rechargeable, or there are mixed battery types installed in the lamp or the battery temperature is above 150˚F.

    - **Red and Yellow** – There is power plugged into the lamp but it is just enough power to run the microprocessor in the lamp, but nothing else. For instance, it has become night time.
    - **All OFF** – If batteries are installed.
        - If the batteries are above the minimum voltage, after 10 minutes of not being used, the lamp will go into a low power mode and will turn off the status light, to not over-deplete the batteries with the lamp is not in use. Touching any one of the four lamp buttons, or plugging in power, will automatically take the lamp out of its low power mode and the status lights will begin functioning again.
        - The batteries have gone below their minimum voltage threshold and need to be charged. Do not take out the batteries, more details below.

Status Lights Indicator Chart

RED	YELLOW	GREEN	USB Port ON	Power Condition
OFF	OFF	ON SOLID	LFP - CAN BE NiMH - NO	No power plugged in, batteries are 80% or more charged
OFF	OFF	MED BLINK	LFP - CAN BE NiMH - NO	No power plugged in, batteries are 20% to 80% charged
OFF	OFF	FAST BLINK	LFP - CAN BE NiMH - NO	No power plugged in, batteries are less than 20% charged and need to be recharged soon
BLINK ON AND OFF	OFF	BLINK ON AND OFF	NO	When an on-switch is touched but batteries are below their voltage threshold and need to be recharged. Lamp will not come on due to very low battery voltage.
OFF	ON SOLID	MED BLINK	YES	Batteries are charging properly and there is full power from the solar panel or wall plug adaptor
OFF	ON SOLID	SLOW BLINK	YES	Battery charging will be completed in 45min or less
OFF	MED BLINK	MED BLINK	NO	Batteries are charging properly but there is partial power from the solar panel. This occurs when shade covers the solar panel, the sun is no longer shining directly onto the solar panel, or the sky has become cloudy. When using the wall plug adaptor supplied with the unit, the YELLOW light will always be solid
OFF	MED BLINK	SLOW BLINK	NO	Battery charging will be complete in 45min or less, but there is partial power from the solar panel. This occurs when shade covers the solar panel, the sun is no longer shining directly onto the solar panel, or the sky has become cloudy. When using the wall plug adaptor supplied with the unit, the YELLOW light will always be solid
OFF	FAST BLINK	MED BLINK	NO	Batteries are charging but very slowly because there is very little power from the solar panel. This occurs when shade covers the solar panel, the sun is no longer shining directly onto the solar panel, or the sky has become cloudy. When using the wall plug adaptor supplied with the unit, the YELLOW light will always be solid
OFF	FAST BLINK	SLOW BLINK	NO	Battery charging will stop in 45min or less but the batteries may not be fully charged because there very little power from the solar panel. This occurs when shade covers the solar panel, the sun is no longer shining directly onto the solar panel, or the sky has become cloudy. When using the wall plug adaptor supplied with the unit, the YELLOW light will always be solid
ON	FAST BLINK	MED BLINK	NO	There so little power from the solar panel that the batteries are no longer charging. This occurs when shade covers the solar panel, the sun is no longer shining directly onto the solar panel, or the sky has become cloudy. When using the wall plug adaptor supplied with the unit, the YELLOW light will always be solid
ON	OFF	ON SOLID	Can be	No power plugged in. The batteries are either not rechargeable, or there are different battery types installed in the lamp.
ON	OFF	MED BLINK	NO	No power plugged in. The batteries have become too hot (higher than 150˚F)
ON	ON SOLID	ON SOLID	Can be	Power plugged in. The batteries are either not rechargeable, or there are different battery types installed in the lamp.
ON	ON SOLID	MED BLINK	YES	Power plugged in. No charging is occurring because the batteries have become to hot (higher than 150˚F)
OFF	ON SOLID	OFF	YES	There is full power from the solar panel or wall plug adaptor, with no batteries installed. The lamp will operate and the USB dedicated charge port is operational
OFF	ON BLINK	OFF	NO	There is partial power from the solar panel and no batteries are installed in the lamp. This occurs when shade covers the solar panel, the sun is no longer shining directly onto the solar panel, or the sky has become cloudy and so the lamp may not be able to operate at its highest brightness settings. When using the wall plug adaptor supplied with the unit, the YELLOW status light will always be solid.
ON SOLID	ON BLINK	OFF	NO	There is not enough power to operate the lamp. This occurs when shade covers the solar panel, the sun is no longer shining directly onto the solar panel, or the sky has become cloudy and so the lamp may not be able to operate at its highest brightness settings. When using the wall plug adaptor supplied with the unit, the YELLOW status light will always be solid.

- **How long does the lamp run on batteries?**
  - NiMH (1.2V)
    - Operates the lamp for 4 hrs. on high, 9 hrs. on medium, 23 hrs. on low.
  - LFP (3.2V)
    - Operates the lamp for 4 hrs. on high, 8 hrs. on medium, 18 hrs. on low.
  - Alkaline (1.5V, not rechargeable)
    - Operates the lamp for 4 hrs. on high, 9 hrs. on medium, 23 hrs. on low.
  - Li-ion (3.7V)
    - Operates the lamp for 2.5 hrs. on high, 5 hrs. on medium, 11 hrs. on low.

- **What is the current rating of the USB dedicated charge port?**
  The USB charge port provides 0.6A, well above the minimum standard of 0.1A.

- **What devices can be charged from the USB dedicated charge port?**
  The USB charge port auto-detects the charging standard of the unit that is plugged in for charging, and automatically provides the correct electrical signature to charge compliant devices. Devices such as:
    - Mobile phones
    - Tablets
    - Cameras

- **Can the USB port be powered from batteries?**
  When LFP or Li-Ion batteries are installed, the USB port can be turned on to charge USB compliant devices.
    - Simultaneously press the OFF and LOW buttons.
    - The Red and Yellow status lights will flash, while the green status light will be off, and then the green status light will come back on.
    - When the USB device is charged, or unplugged, the lamp will go back to normal operation after one minute, at which time the red and yellow status lights will flash.
        - Charging USB compliant devices from the batteries will drain the batteries and so less power will be available to operate the lamp.
        - The lamp may be turned on while a USB compliant device is being charged from the batteries, but the duration that the lamp will be on will be greatly reduced.

- **What is the charging time based on battery type and source of power?**
    - LFP batteries with a 5W solar panel:
        - 3 hrs. at 700W/m^2 or greater solar incidence
        - 4 hrs. at 300W/m^2 solar incidence
    - LFP batteries with supplied wall power adaptor:
        - 3 hrs.
    - NiMH batteries with a 5W solar panel:
        - 5 hrs. at 700W/m^2 or greater solar incidence
        - 10.5 hrs. at 350W/m^2 solar incidence
    - NiMH batteries with supplied wall power adaptor:
        - 5 hrs.

- **What does Equal Charge mean?**
  LFP batteries can be recharged many hundreds of times. Over time the charge of each battery may become different, one battery not getting as much charge as the others. An indication of this happening is when the lamp will not operate for as long. A special feature of InteliEnergy Cordless/Battery Lamp is that each battery can be individually equal charged so that they all take the same amount of charge again.
    - Operate the lamp until the green status light is blinking.
    - Remove all of the batteries from the lamp.
    - Install one battery in the first battery holder (see proper battery installation).
    - Operate the lamp until the green status light is blinking.
    - Plug in the power to the lamp. In three hours, the battery will be fully charged.
    - Remove the charged battery and repeat these steps for the other batteries.
    - When the last battery is charged, remove it, the install all three batteries so that the batteries are properly identified.

- **My lamp does not run as long as it used to, why?**
    - NiMH – getting old (a few hundred recharge cycles)
    - LFP and Li-Ion – It's time to equal charge each battery or batteries are getting old (many hundreds of cycles)

- **I may not use my lamp for several weeks, is there something I should do?**
  When you know your lamp will not be used for an extended period of time, it is always a good idea to do one of the following:
    - Leave it plugged into your solar panel, or optional wall power adapter, to keep the batteries charged and fresh. The batteries will not over-charge.
    - Remove the batteries so that they remain fresh for the next time you use your lamp

- **My lamp has sat for a long time and now the status lights do not work, what should I do?**
    - For NiMH batteries:
        - Do not take out the batteries, just plug the lamp into power and the lamp will fully charge the batteries.
    - For LFP batteries:
        - Plug in power to charge the batteries.
        - When the red LED comes on, remove the charging power and remove the batteries.
        - Install one battery into the number 1 battery holder and plug in the charging power.
            - If the green status light comes on and is blinking, then charging has begun.
                - Install the other two batteries and allow them to charge for about 15 minutes.
                - After about 15 minutes remove the charging power, and remove all of the batteries.
                - Re-install all of the batteries and plug in the charging power. The batteries will charge in the normal time.
            - If the green status light does not come on, then remove the power and install a second battery into the number 2 battery holder, plug in power again.
                - When the green light begins to blink, put the third battery into the number 3 battery holder. Allow batteries to charge for about 15 minutes.
                - After about 15 minutes remove the charging power, and remove all of the batteries.
                - Re-install all of the batteries and plug in the charging power. The batteries will charge in the normal time.
- **How do I activate the 2-hour timer?**
    - Simultaneously press the OFF and MEDIUM buttons.
    - The Red and Green status lights will flash, while the Yellow status light will not change.
    - To turn off the timer before it times out, just press the OFF button.

- **Does the timer work for all light levels?**
    - Yes. After the timer is set, select the desired lamp brightness.
    - If the lamp is turned off within 10 seconds of the timer being set, once 10 seconds has passed, the Red and Green status LEDS will blink once to show that the timer is no longer active.
    - If the lamp is turned off and the timer has been running for more than 10 seconds, or the timer times out, when the lamp turns off the Red and Green status LEDs will blink once to show that the timer is no longer active.

- **Can I change the light level while the timer is running?**
  Yes, changing the lamp brightness does change the time operation. However, pressing the OFF button turns off the lamp and stops the timer if more than 10 seconds has passed since the timer was started.

- **How do I know if the timer is running?**
  When activated, the red and green status lights blink together. When the lamp turns off the status lights will do the same thing.

- **What can I charge based on power source?**
  - Wall plug adapter
    - The batteries can be charged, the lamp can be turned on without drawing power from the batteries, and a USB compliant device can be charged all at the same time.
  - 5W solar panel with 700W/m^2 or greater solar incidence (maximum solar incidence in the middle of summer at the equator is 1000W/ m^2, the standard for how solar panels are rated), one function at a time can be performed.
    - USB compliant device charging.
    - Lamp battery charging in 3 hrs.
    - Lamp operation without drawing power from the batteries, up to Med brightness.
  - 5W solar panel with 350W/m^2 solar incidence, one function at a time can be performed
    - USB compliant device charging at a reduced charge rate.
      - Depending on the device manufacturer, charging may not occur at this reduced power level.
    - Lamp LFP battery charging in up to 4 hrs. This is a special feature of InteliEnergy Cordless/Battery Powered lamps. The charge time increases only 33% during times when the power of the sun is reduced by 65%.
    - Lamp operation without drawing power from the batteries, up to Med brightness.
  - 5W solar panel with 300W/m^2 solar incidence, one function at a time can be performed
    - USB compliant device charging at a reduced charge rate.
      - Depending on the device manufacturer, charging may not occur at this reduced power level.
    - Lamp battery charging in up 4.5 hrs. This is a special feature of InteliEnergy Cordless/Battery Powered lamps. The charge time increases only 50% during times when the power of the sun is reduced by 70%.
    - Lamp operation up to Low brightness.

- **How do I maximize the amount of power output from the solar panel?**
  - Keep the solar panel in full sun.
  - Position the solar panel so that its face is perpendicular to the sun's rays.
  - Keep the solar panel clean.
  - The sun provides the most amount of power at noon, when it is overhead. For the most amount of power, use the solar panel from mid-day to midafternoon.
    - InteliEnergy Cordless/Battery Lamps maximizes the available power even during the early morning and late afternoon or evenings, to harvest as much power a possible, but for maximum power, mid-day use is the best.

- **What is the priority of power usage from a solar panel?**
  - First priority is to charge the batteries of the lamp.
  - Second priority is to turn on the lamp without using power from the batteries.
  - Third priority is to charge a USB device.

- **How do I know how much power is being supplied by the solar panel?**
  - The Lamp monitors the power from the solar panel. When there is full power during the battery charging, the Yellow status LED will remain on solid.

- If the lamp is turned on or a USB device is plugged in while the batteries are being charged, and if there is not enough power from the solar panel to power all functions, the Yellow status LED will blink at a medium rate or at fast rate (the faster it blinks the less power there is coming from the solar panel) and all available power will go the charging the batteries. This means that if the lamp is turned on, it will be turn off automatically, and if a USB device is charging, the charging of that device will stop.
- During charging of the batteries, or operation of the lamp, or charging of a USB device, if the Yellow status LED changes from being on solid to blinking, then the InteliEnergy Cordless/Battery Lamps is sensing reduced power output from the solar panel. When this condition occurs, please check your solar panel. Perhaps shade from an object, like a tree or a building, has passed over the solar panel and the solar panel now needs to be moved. Or perhaps due to the movement of the sun, the solar panel is no longer facing directly into the sun and needs to be repositioned.
    - When the power from the solar panel is reduced and the Yellow status LED is blinking, with LFP batteries, the InteliEnergy Cordless/Battery Lamps will guide all available power to the batteries, disallowing the lamp to be turned on. This will provide for fast charging the batteries even in reduced power conditions.

- **Can I upgrade to a larger solar panel to get more power?**
  Yes, InteliEnergy Cordless/Battery Lamps use standard 12VDC solar panels. Larger solar panels can be used and to gain more power. Purchase the optional S15CABLE to connect a standard 12V solar panel to an InteliEnergy Lamp.

- **Can I add another solar panel to get more power?**
  Yes, InteliEnergy Cordless/Battery Lamps use standard 12VDC solar panels. More power can be obtained by wiring multiple solar panels in parallel.
    - Purchase the optional SYCABLE to power one lamp from two solar panels.
        - This cable includes the right kind of connectors to plug in solar panels supplied by Elevate Technologies Corporation to InteliEnergy Cordless/Battery Lamps. Simply plug each solar panel into each of the jacks, and insert the plug end of the cable into the jack on the InteliEnergy Cordless/Battery Lamp. The lamp will figure everything else out, automatically recognizing that more power is available.
        - The cable includes blocking diodes so that if one solar panel becomes shaded, the other solar panel will not back drive power back into the shaded solar panel, stopping potential damage.

- **Can I charge more than one lamp at a time from a single solar panel?**
  Yes. It will take some special wiring to be able to plug two lamps into the same solar panel. But the best thing is that with LFP batteries, two lamps do not take twice as long to charge as one, when using one solar panel. Two lamps being charged from one solar panel will charge in about 4.5 hrs. with 700W/m^2 or greater solar incidence.

- **If I make my own cable and get the polarity wrong, will the lamp blow up?**
    - NO. InteliEnergy Cordless/Battery Lamps have self-protection circuitry so that if the voltage is backward, no damage will be done to the lamp.

- **The lamp switches sometimes don't work so good, what do I do?**
    - Touch top and bottom at the same time.
    - Reinstall batteries, keeping hands and body away from switches while batteries are being installed.

- **The lamp is too bright, even on the lowest setting, what do I do?**
    - Use the supplied visor to direct the light from the lamp downward.
        - To install, simply press the three tabs on the visor into the three mating holes on the top and two sides of the lens on the shade. Press the tabs inward until the snaps are fully engaged.
        - To remove, gently pull the visor straight out of the shade.
    - Purchase a lens filter kit (used in place of the lens visor) and use the frosted, or one of the colored lenses, to meet your lighting needs.
        - To install, simply press the four tabs on the visor into the four mating holes on the top, bottom and two sides of the lens on the shade. Press the tabs inward until the snaps are fully engaged.
        - To remove, gently slide your finger nails under two sides of the lens filter in the recessed areas on the back of the lens filter, and gently pull the lens filter straight out of the shade.