www.ellumiglow.com
info@ellumiglow.com
877-615-6556

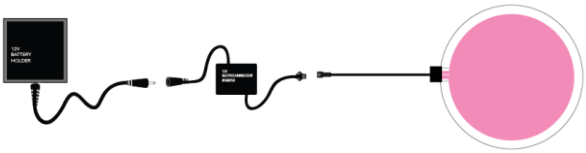
# ASTROPHOTOGRAPHY FLAT FRAME INFORMATION SHEET

Ellumiglow's Astrophotography Flat Frame kit is an ideal kit to way to enhance your night time photos of the universe by providing an evenly illuminated surface to easily transport with you to any location. It's small and flexible design allows it to store easily, and its portable design allows it to be there when you need it. Batteries will last for multiple sessions, but we recommend unplugging the battery from the inverter when storing for long periods. The natural color of the panel appears a pink/peach hue when not lit, and glows a cool white color when illuminated. Our newer kits have a white overlay which masks the pinkish hue and provides a more illuminated surface. These same panels come with an adhesive front and back, and can have the frosted acrylic adhered in seconds, with the same process you would use to apply a screen protector to a phone.

## WIRING DIAGRAM:

BATTERY OPERATION

PLUG-IN OPERATION



## BENDING

This flat frame kit, while flexible, can end up getting dark spots in the panel if mishandled. We recommend storing on a flat surface, away from sharp objects that could put too much pressure across the surface of the panel.

## OPERATION

The smaller (5, 6, & 8") Astrophotography Kits can include a 9V Battery Pack which takes a single 9V Battery and can be installed by pressing firmly and sliding your thumb across the arrow door. Once the battery is installed, the small button located on the bottom left of the image above will cycle the panel through a blink mode, then to a constant ON. A 3rd button press will turn the device OFF. The 6-15" kits *can* come with a brightness adjustable 12V Mondo EL Inverter (~500mA consumption), or USB Inverter. Simply unplug when not in use, or use the slide switch to turn off. The brightness adjustment knob allows for fine tuning the brightness on the panel. The PWM Inverter (available for the 5"-8" Kits) allows you to algorithmically use software devices to PWM your inverter to adjust the brightness. It does not have its own brightness adjustment knob. The USB inverter can come with a USB Touch Dimmer. Simply press and hold the touch dimmer to adjust brightness. Press and hold again to adjust brightness in the opposite direction. A quick press will turn the device on or off. If your kit came with the frosted acrylic, make sure to remove the tan-colored protective film **prior to use**. This keeps the acrylic from unnecessary scratches and abrasions during shipping. The new 2023 and newer kits do come with adhesive on the front and back sides of the panel, which is nice to mount the acrylic to without having to disassemble during transit.

**PRO-TIP:** The output of the light is slightly on the bluish spectrum, the frosted acrylic (40% translucent) that is available on our kits when placed over the face of the panel filter out some of the blue and granularity that is part of EL technology in general. This is now included as an option on checkout for each kit.

**RAW IMAGE**

**W/ FLAT-FIELD CORRECTION**

Have fun exploring the universe and be sure to tag @Ellumiglow or #AddLightAnywhere on your favorite social media account!

## STORING

Storing the panel on a flat plane will help keep the panel free from bowing or creasing, and can be stored for years properly. Keep stored in a cool, dry location away from direct sunlight for best results. The new 2023 kits come with a handy storage sleeve which is how we recommend transporting the panel when not in use. When adding undue pressure to the connection area, this portion can cause the panel to short out if bent too many times. It is recommended to be cautious with this connection area to ensure your panel works continuously.

## SCRATCHES

EL Panels are a flat, even surface. This is great for applications that require even illumination in areas that may have previously been impractical to have light. The lamination is a plastic derivative which means it can get scratched if care is not given. In applications like astrophotography where even a scratch free surface is important, make sure to use caution when handling the face of the panel (the flesh colored side).

## ADHERING

All new 2023 panels and newer have both an adhesive front AND back. This allows you to permanently mount the panel directly to the frosted acrylic easily**.** We give you the option of Self-Assembly or Pre-Assembly. For Self-Assembly, please **FOLLOW ALONG WITH THE ASSEMBLY INSTRUCTIONS BY SCANNING THE QR CODE.** Much like applying a screen protector to a smart phone, make sure the surface of the acrylic is wiped clean to make sure no debris has remained. Next, with the acrylic on a flat surface (and the textured side facing on the panel), remove the clear protection film on the front of the EL panel, and lay it down gently to align directly to the acrylic surface, using a squeegee or flat surface to help remove any bubbles. Once aligned, press firmly across the surface of the panel to make sure the entire EL Panel has a good adhesion to the acrylic. If there are any areas that are not making good contact (i.e. bubbles) onto the acrylic surface, you may notice an uneven light appearance, as small gaps between the two surfaces can create shadowing. If you purchased a second piece of acrylic, you can apply to the backside of the panel using the same method. It is recommended to apply the acrylic to the front of the panel first.

## IMPERFECTIONS

While EL Panels have a uniform surface, adding the frosted acrylic can make it seem like the surface has an uneven appearance. This is because the EL Panel is not completely flat against the surface. Adding pressure on the panel size can often smooth out any bubbles or imperfections. If you notice a spec of dust on the panel, that's OK! The acrylic will help diffuse this speck.

## TAKING FLATS

The EL Panel is designed to uniformly photograph your EL Panel at short exposure durations (called flat frames) to remove vignetting (darkened corners due to optical design), dust motes (dark spots caused by dust on optics or sensor), or pixel sensitivity variations (non-uniform response across the sensor). Your software uses these flats to stack images together, then algorithmically removes "noise" or artifacts. ***We recommend to take multiple flats (typically 15-30) with your EL Panel, and rotate or shift the panel between flats. This will normalize any imperfections across the panel surface giving you perfect astrophotos every time!***

## CLEANING

Gently take a polishing rag or sunglass cleaner to wipe the surface clean of debris or dust. Our new 2023 panels come with a carrying sleeve which also doubles as a cleaner. Rubbing alcohol can be used to help remove any stains or spots from the surface of the panel. Paper towels can leave scratches so using a soft microfiber cloth will help keep the surface free from scratches.

## POWER

EL Panels can be powered by either battery packs or inverters that plug into a wall outlet. Each inverter or battery is rated for a specific range (i.e. 60-120sqin) of surface illumination. Our Astrophotography kits come with an inverter appropriately sized for each kit. If you need additional extension cables or other accessories to make your kit fit better with your setup, check out our "EL Accessories" category.

## FAQ

- **What is an EL Panel?**
  EL Panels start with an Electroluminescent Phosphor. There are two electrodes on the panel; an outer bus bar, and the main electrode which fills the majority of the panel. These electrical fields create an AC electrical field across the surface of the panel. When a high voltage and frequency are applied to the EL Panel, it creates a beautiful, even glow. ALL EL Panels require an inverter to operate, which typically operates on a frequency between 400-2000Hz. This tends to be in our audible range, so depending on the battery or inverter you are using, *you may hear a high-pitched frequency when operating*. This is normal.
- **Can EL Panels Be Cut?**
  Technically yes. However, an EL Panel is like a big capacitor and when it's cut, it's not able to do its job properly. Cutting the panel could make the panel stop working prematurely or create an uneven surface. If you need to block out light to part of the panel, instead we typically recommend adding a black vinyl over the parts not intending to illuminate.
- **My EL Panel Stopped Working, What Can I Do?**
  There are two common ways that the EL Panels could stop working; The first is the wires where it meets the panel somehow got separated. Typically, we solder and add a silicon glue to the connection area to prevent the wires from coming loose, however sometimes the wire can sever at this point. Open either the silicon connection cover or heat shrink tubing around the connection area to see if the wires are broken or loose. Connecting the wires back onto the panel should fix most broken panels with this issue.
  The second most common way EL Panels stop working is the bus bar got cut, snipped, or shorted somehow. Look around the edge of the panel and see if you can find any breaks or angel hair cracks in the bus bar. If you find one, it can be repaired with some copper tape (conductive tape) by joining the two areas around the break. For information on how to cut and connect EL Panels, visit our YouTube channel at https://www.youtube.com/user/Ellumiglow
- **Can EL Panels Dim?**
  Yes, we various inverters for the Astrophotography kits, including dimmable inverters, which have a jog wheel that allows a manual dim of the lighting surface. We also offer 12v inverters that can have the brightness controlled through voltage dimming or PWM or computer controlled, typically on larger panels common on panels 24" or above. In some instances when dimming, banding can occur on flats. Use your dimmer to increase or decrease the PWM or voltage to levels above or below where the banding occurs. Due to the granular nature of EL Panels, the "turn on" voltages can vary in the phosphor particles themselves. This is more noticeable the dimmer the light gets, which makes the panel's light seem to be uneven. If this is the case, we recommend turning up the brightness on the inverter to excite the entire surface of the panel.