

The Light Wrap Fantastic 1.0



LIGHTWRAP
fantastic

Create amazing composites by simulating backlighting



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Tutorials

For more info and training about The Light Wrap Fantastic, please see our web videos going over the basics and more advanced topics. You can find them here:

<http://www.digitalanarchy.com/LightWrap/tutes.html>

About This Manual

The Light Wrap Fantaastic supports many host applications. The controls for LWF are the same in every application. So throughout the manual we will show examples (and the UI) from different host apps. If a particular graphic doesn't look exactly like what you see, please focus on the name of the controls which are all the same.

There are one or two exceptions, which will be pointed out as needed. In those cases you will see examples from each host application.

Welcome to The Light Wrap Fanstastic!

Light Wrapping is a great way of creating more realistic composites. This is important regardless of whether you're masking out a foreground subject by rotoscoping and using a mask or keying footage on a green or blue screen.

Light wrap allows you to simulate backlighting. It fakes the look of light behind the subject bending around the subject. We've all seen someone with a light directly behind them become silhouetted with a glow around them. If light travelled in a perfectly straight line, you would see a perfect silhouette and not see anything in the dark areas.

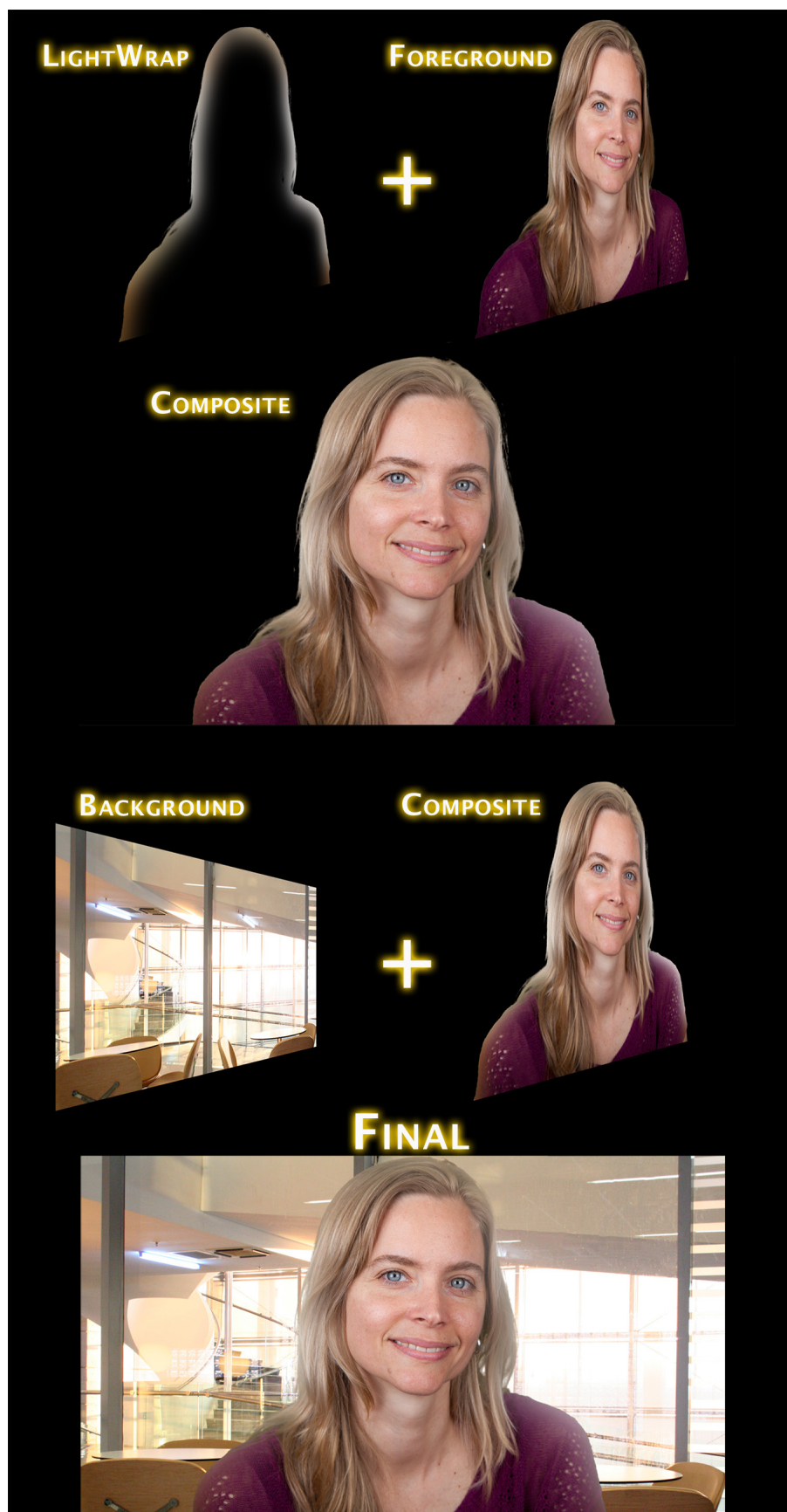
However, that's not how light works. It will 'bend' around an object (the phenomenon is called Diffraction) and illuminate areas where you might think should not be getting any light. Since we see this effect everywhere, we may not realize what is happening. It's just normal.

(If you need to more about diffraction, the interwebs is chock full of detailed descriptions of the physics behind it. It's mostly sleep inducing, so I'll spare you. Of course, if particle/wave physics is what gets you going in the morning...)

As a photographer, videographer or compositor, this may be old news to you, but many of your viewers may not be aware of it. And if it's lacking, the composite will seem too 'cut-out' and not realistic...even though they may not know exactly why it looks cut-out.

The Light Wrap Fantastic solves this problem by simulating diffraction and faking the light bending around your foreground. It's not perfect, but when used correctly, it creates one of those subtle hints to the viewer that this was all shot in camera and is a totally normal scene. Even if the scene is composed of an actor on a green screen, props masked out from another shot, and an environment created in a 3D program... in other words, anything but a normal, 'real' scene.

But so it goes with the Magic of filmmaking and getting your viewers to suspend their disbelief. As often as not, it's the small details that sell the shot.



How It Works

The Light Wrap Fantastic works by taking the alpha channel of your foreground object (created either with a mask or key) and sampling the colors from the background around the edge of the alpha channel.

Sort of like cutting out an outline from your background. Imagine Wile E Coyote running through a wall. Except the only part of the wall that crumbles is around his outline. You can then expand this outline, adjust the brightness or otherwise tweak it.

This outline is blurred and then composited over your foreground subject, effectively simulating light bending (i.e. wrapping) around the edges from a back light.

Unlike in real life there's no science behind this. You'll have to judge for yourself what works for your scene, foreground and lighting. Frequently with visual effects, you may need to overdo it slightly. How it actually looks in real life and how it has to be done with visual effects to meet what people THINK it looks like in real life, are often not the same thing. So sometimes you'll have a bit more light than you think looks good.

However, keep in mind that you're staring at this for hours (or days), turning the effect on and off, and analyzing it endlessly. The viewer will see it for 15 seconds on the screen. While you want it to be subtle, you want them to notice it too.

Green Screen Spill (or Blue Screen)

One other advantage of light wrapping is that it can help color correct spill problems along the edges of your foreground subject. Spill occurs when there's a little green or blue left over from the keying process. By compositing the background color on the edges of your subject, you will dampen, and possibly fix, any stray green or blue pixels.

This doesn't always work, and sometimes it only works well when used in conjunction with other spill removal tools, but it is one way of combating spill problems.

The ADD blend mode is particularly useful. The other blend modes that are commonly used (Soft Light and Overlay) may actually work against you if the spill is more of a dark edge around your subject. Those blend modes increase contrast and may make the dark outline MORE pronounced. Just something to be aware of...

So that's all there is to it on a basic level. Dig into the explanations of the parameters for more details.

Happy compositing!

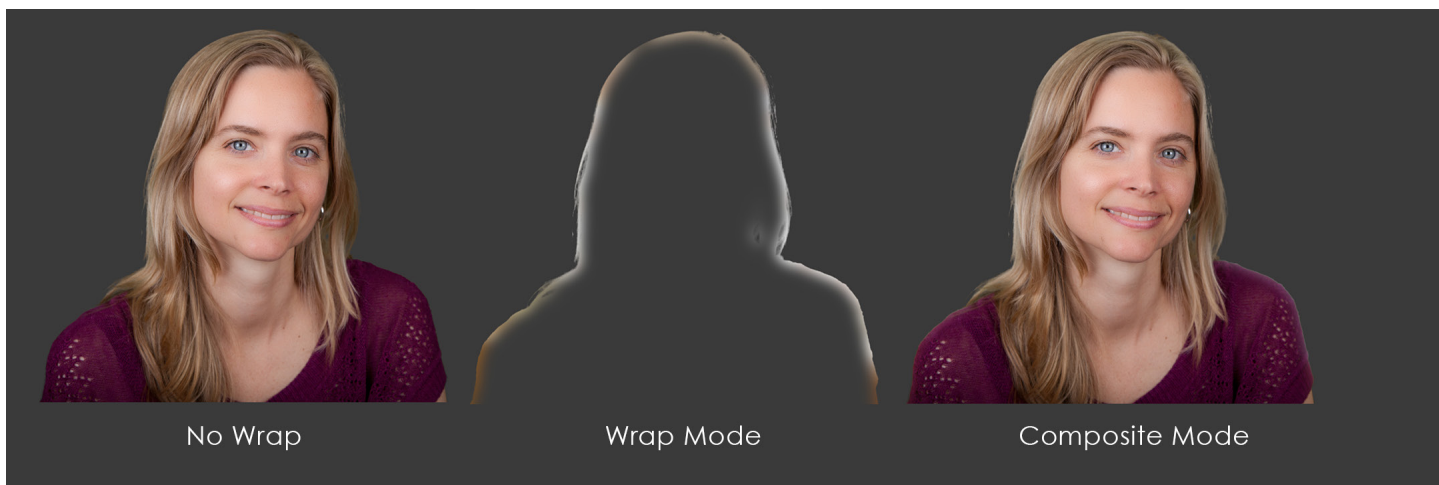
Your friendly neighborhood Anarchists

Render dropdown

When using LWF, there are two methods of applying light wrap: Composite and Wrap. **(see image below)**

Wrap

This mode hides the foreground layer rendering only the light wrap against a black background (or color of your choice). This is useful if you have a workflow where you want the light wrap as a separate layer. Usually the light wrap will be composited with the foreground by using the Screen blend mode, to drop the black out.



Composite

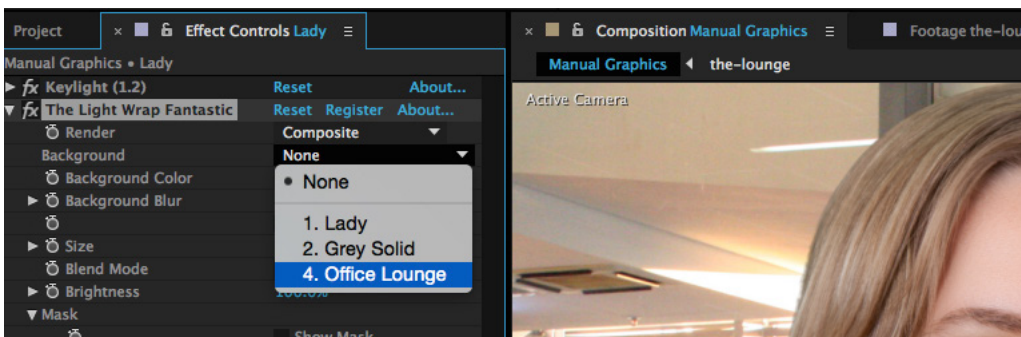
This mode applies the light wrap directly on top of your keyed foreground layer for quick, easy results. Pretty much how you would expect any other effect to work.

While there is no right or wrong way to apply LWF, “Wrap” mode allows the user to add effects such as color correction to the foreground layer without potentially impacting the light wrap’s color. For most compositing cases, “Composite” mode will work just fine but for workflows where you want to have the light wrap as a separate layer, Wrap mode does just that.

Background Layer dropdown

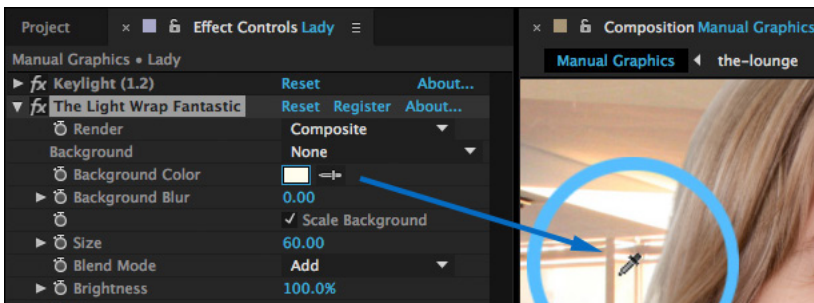
After you've added LWF to your chroma keyed or masked footage the first step is to select a solid color or background image to reference for your light wrap. In most cases, choosing your background image/video will suffice to accurately portray the bending of light you'd find with natural backlighting.

By default, a solid color is used as the light wrap. You can select a layer in your composition to reference from the "Background" dropdown menu.



It's recommended that you use your background layer. This will usually create the most realistic look. As always, this is not always the case. So, *gasp* some artistic judgment on your end will be required. (We are miracle workers here at DA, but every now and then it's possible you know what your video needs better than we do. ;-)

So, if the resulting effect doesn't fit the look you're going for, you can use a solid color. For best results choose the eyedropper tool from the "Background Color" parameter and select the color in your background that is the brightest and most common in the frame. **(Figure 3)**



Scale Background checkbox

Before going any further, take note that the "Scale Background" checkbox should almost always remain checked. This parameter automatically scales any background image smaller or larger than the composition resolution to fit the confines of the comp.

This is important because you want to bright areas of the background to match up with the bright areas of the light wrap. If you have someone with a moving background behind (say they're in a car) you want their head to be illuminated right when the big light in the background appears behind their head.

Technical Mumbo Jumbo: "Of course, I want the light to appear behind their head! Duh!", you say. "Why wouldn't it?" (ok, you might not say 'Duh!')

It has a lot to do with how plugins work within video editing applications. Say you're working on an HD project... the foreground is HD but your background is 4K. You key your HD foreground on one track/layer. Then you drop in the 4K background behind it and scale it down to HD. Very common way of doing things.

Unfortunately, if you apply Light Wrap Fantastic to your HD foreground layer and set the LWF's Background Layer to your scaled-down, 4K background footage... what the video editing application is going to hand off to LWF is the original 4K footage. NOT the scaled-down version.

Host application typically give plugins the original footage without effects or adjustments like Scale applied to them. If you scale down the footage and Pre-comp (AE/Premiere) or Compound (FCP) it, then the host app WILL give LWF (or any other plugin) the scaled down background.

So if you don't have LWF's Scale Background turned on and the footage hasn't been pre-comped, the light wrap will not match up with your background in the timeline.

The Light Wrap Appearance

Now that we've applied our light wrap, we need to define how it'll look. For that, we need to take a look at the following parameters: Background Blur, Size, Brightness, and Blend Mode.

There are no 'correct' values for these. So, again, a little artistic judgment is needed.

Size

This determines the size of the wrap in pixels. Essentially how far into the foreground subject that light will wrap. At low values the light wrap is just a feathered outline. At very high values it will almost be covering the entire subject.



The size will vary based on the resolution of the foreground subject. For example, a 2 pixel Gaussian blur will look different on an SD (640x480) image than it will on a 4K image. The SD footage will be significantly more blurry. Same with Light Wrap. A Size of 15 might be huge for SD footage, but just be a thick outline for 4K.

Size will also automatically blur the background as it gets larger. For small sizes you may be able to see some detail from the original image if you look at the light wrap in Wrap mode. As the size gets bigger, everything gets blurrier. If you want even more of a blur on the background, increase Background Blur.

Background Blur

Allows you to blur the background even further. As mentioned, Size does this automatically, but if you want to take it to 11 (and who doesn't?), BG Blur is the parameter for you. Usually you can leave this at zero, though.

Brightness

Shockingly, this increases the brightness of the light wrap. This will have very different effects depending on what blend mode you're using. So don't be surprised to use different Brightness values for different blend modes to find the look you want.



Blend Modes

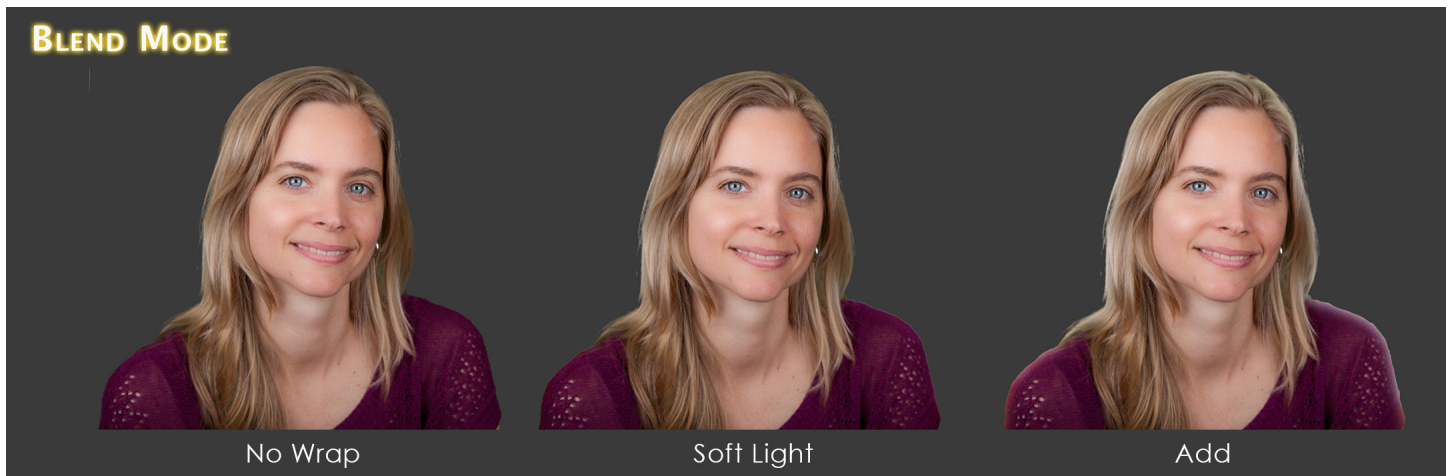
Soft Light and Overlay: These work very similarly. If the color is brighter than 50% gray, it'll lighten the image, if it's darker than 50% gray, the underlying pixel will darken. These provide a more subtle effect than Add and usually look better. They have the added benefit that if your background is changing between dark and light, when it's dark it'll actually darken the foreground.

Add : Adds the light wrap to the foreground, increasing the brightness of any foreground pixels. It's easy to overdo this one, so adjust Brightness to taste so you're not totally blowing out the highlights.

Multiply: Darkens the image. Can be useful in a changing environment where you want the foreground to get darker if the lights get darker.

Screen: Lightens the image. Softer than Add.

Color: Causes the underlying video to take on the color of the light wrap.



Probably the only blend modes you will ever use are Soft Light, Overlay and Add. We're not sure why we included the other ones. If you use one of the other ones to do something cool, email us and let us know (sales@digitalanarchy.com). It'll be good to find out why we put the other blend modes in. (ha... you think I'm kidding... ;-)

Perfecting It

Depending on the brightness and coloring of your background you'll need to finesse these four parameters to values that best fit the composite for the most convincing and natural look. As an example, if your background is a brightly lit room with lots of windows choosing a slightly over-the-top Blend Mode like "Add" with larger values for Size and Brightness may be appropriate. With a darker background like a sunset, the more subtle "Soft Light" or Overlay Blend Mode with low Brightness may be more appropriate.

However, it would be a mistake to take a "one-size-fits-all" approach to applying light wrap. Every background is different and therefore every light wrap application will change to best accommodate the composition.

Not only that but if you're referencing a video background the lighting could change during your scene as well! You may have to set keyframes for brightness as your talent moves through the different lighting environments. If this is the case the Blend Mode should usually be set to Overlay or Soft Light. Many blend modes only make pixels darker or lighter. Overlay and Soft Light will do both. So if the background is light, your foreground will be made lighter, if the background is dark, your foreground will darken a bit.

However, you should pay attention to how well the wrap fits the lighting and go with your intuition. Does the brightness make sense for the background or is it too subtle/heavy handed? Does this composite *feel* right? Will the audience notice it? These should be the questions you ask when adjusting your light wrap.

Masking the Light Wrap

So far we've applied our light wrap so that it encapsulates our entire foreground layer; the fake light bending is placed along the entire edge of our keyed image. But what if the lighting in the scene is more complex and calls for the light to be stronger on just one side of your foreground layer (e.g. the only light in the background is coming from a window to the talent's left)? Luckily, LWF has a few ways of being able to control the light wrap and have it only appear on a portion of the foreground. This involves using one of the built-in mask types.

Obviously you could mask the light wrap in your host application, but it's much more convenient to do it from within the plugin!

Mask Style pop-up

The Mask Style pop-up has three options: Gradient, Layer, and Path.

All three let you mask the light wrap, so that it only covers a portion of the foreground subject. Gradient is the easiest method, so let's start with that.

Gradient Mask

Gradient, as you might guess, let's you create a simple, black to white gradient that can be used as a mask. There are controls for the **Center Point**, **Width** and **Angle** of your gradient. It's a quick and easy way of limiting the light wrap to one side of the foreground or the other.

Width defines how wide your gradient is from the white point to the black point. It's a percentage of your layer. So if it's 20% and your layer is 1000 pixels wide, your gradient will be 200 pixels wide.

Center Point sets the position of your gradient.



Gradient Mask

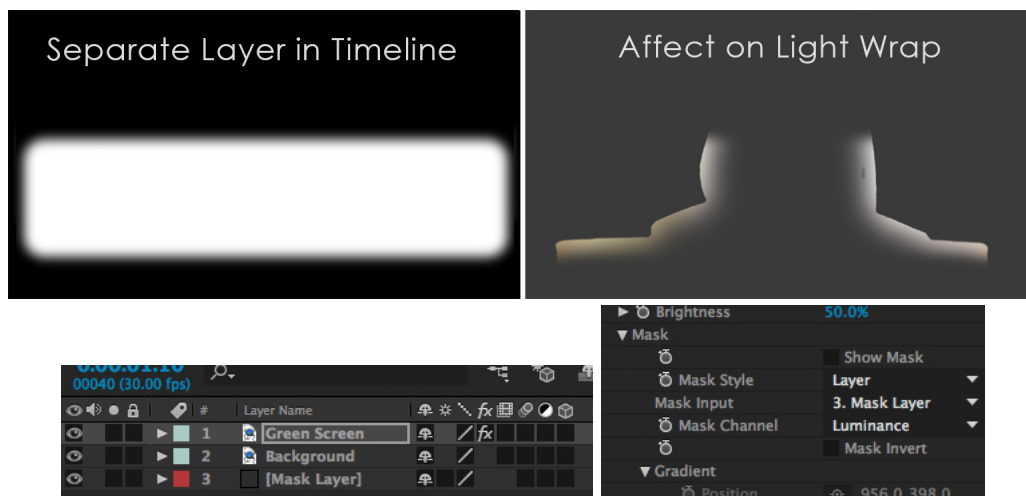
Masked Light Wrap

Composite

Layer Mask

You can choose to use a still image or video file to define where your light wrap mask is being applied. It can be either a black and white layer for a luma matte or a layer with an alpha channel for an alpha matte. By creating a layer with a gradient ramp for instance you could then select it in the LWF controls under the **Mask Input** dropdown, select “Luma” under the **Mask Channel** dropdown and voila! You now are accomplishing a similar application of your light wrap that Gradient mode can do. Of course you can make the image or footage as complex as you like to fit with more complex backgrounds.

One particularly good use of this would be to take the alpha channel created by the keying software, modify that, and use that as the Mask Input. This will give you a mask that moves with your subject.



Path Mask

Specific to After Effects: Path style allows you to choose where you want to apply your light wrap based upon the confines of a mask that you define. This is one of the more versatile options for choosing how to apply your light wrap since you can be very specific about where the bending of light will or will not occur on the edge of the foreground. This is great for situations where you want the light wrap to fall in one place, like an actor's shoulder and lower neck. You can use a path to very accurately isolate that spot. This can create a more realistic look as it eliminates the light from features in the foreground that shouldn't be affected.



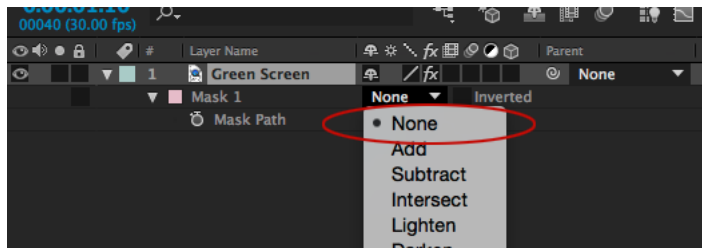
Path Mask

Feathered Result

No Path Feather

This requires you to create a mask in After Effects. To use a path, choose the “Path” Mask Style from the dropdown and, selecting the Pen tool in After Effects.

Create the mask where you want your wrap applied (e.g. a path encircling the lower neck and shoulder). After creating the mask, set the blend mode to “None” (Mask section of the AE Layer). Otherwise the mask will mask off the entire layer, which is not what we want.



Go to the controls for Light Wrap Fantastic and choose the mask you’ve just created under the Path dropdown menu. Your light wrap will now exclusively apply to the confines of your mask. You can further tweak the mask by defining how much you want to feather its edge under the Path controls.



Troubleshooting section

This section covers technical issues you may run into when using Beauty Box.

You are experiencing crashes or render problems

Since Light Wrap Fantastic uses the GPU of your video card, it is important to make sure you have the most up-to-date drivers. Most host applications also use the GPU, so it will benefit. You can get drivers by going to:

For nVidia video cards:

<http://www.nvidia.com/Download/index5.aspx?lang=en-us>

For AMD video cards:

<http://support.amd.com/us/gpudownload/Pages/index.aspx>

Not having up-to-date drivers is the cause of a lot of problems. If you're running into problems with Beauty Box, please try to update your video card drivers first. If you're not sure what video card you have, you can click the Beauty Box 'About Box' or 'Setup' button.

The About Box will tell you who makes your video card and what model it is.

As mentioned, turning OFF 'UseGPU' is a quick way of determining if it's your video card causing the problem.

Light Wrap Fantastic appears to be rendering slowly

Make sure UseGPU is turned on. Also, go to the About box and make sure 'Enable OpenCL' or 'Enable CUDA' are turned on. These can get turned off if Beauty Box crashes. It will attempt to disable these APIs to try and prevent further crashing.

If you have an older video card or less than 1gb of RAM, LWF will still render slowly. The new optimizations require newer Nvidia and AMD cards and at a minimum, 1GB of RAM. On video cards with 512mb or less, you may have to turn off the GPU.

For the most up to date troubleshooting info, please visit the FAQ page at:

<http://www.digitalanarchy.com/LightWrap/faqs.html>