The FLAME™ Formula For Creating Powerful Black Light Effects

When it comes to creating the brightest possible UV effects, there are four absolutely critical elements you must take into account. We've condensed these four factors into an easy-to-remember acronym we call the "FLAME" formula.

F is for "Fixture"

Other than optics, there are two factors to consider when selecting the right fixture for your effect: output and wavelength. Just because two fixtures are each 400 Watts doesn't mean each fixture has the same amount of output…or output at the appropriate wavelength for maximum brightness.

For best results, the fixture should peak at 365-368 nm. Many so-called black lights aren't really black lights at all. (See the next article, "A Brief Survey of Black Light Technologies" for a more detailed discussion on this.) For example, there is the much-touted UV LED in recent years. Most lower-end UV LED's produce light at 385nm to 400nm. White shirts and visible fluorescent materials will start to glow at around 400nm, but that's really high-energy visible violet— not a true black light.

The biggest problem with longer wavelength LED fixtures is that invisible fluorescent materials don't respond well, if at all. To get the best results for all UV sensitive materials, use a fixture peaking at 365nm.

All of Wildfire's higher end Long Throw metal halide, Effects Master fluorescent and VioStorm LED fixtures peak between 365-368nm. This combined with many other factors make them the best black lights for creating the brightest possible effect. We don't expect you to take our word for it without an explanation, so we challenge you to discover what sets our fixtures apart by taking a look.

In short, choosing the right fixture is crucial.

L is for "Length" (of the distance between the fixture and the UV sensitive materials)

This is a fairly obvious point. The closer the light source to the materials, the brighter they glow. So you'll want to mount your fixture as close as possible to the effect. In some cases, such as stage applications, it's impossible to have the light fixture right next to the materials. In those cases, you'll need a good powerful fixture, such as our 150W, 250W and 400W Long Throws which have an effective distance up to 100 feet, or more, depending on the other factors listed here. For closer applications needing broad coverage, our VHO (very high output) fluorescent Effects Master Series can cover up to 50 feet or more.

A is for "Ambient Lighting"

If you have a lot of visible light present, much of your effect will be washed out. You'll want to get rid of as much ambient light as possible. Cover windows, shut off music stand lights, turn off any unnecessary light sources. Do everything you can to cut down on ambient lighting.

If you've done everything possible, but you still have ambient lighting issues, don't worry. You can make up for it with the right combination and placement of fixtures. You'll just be spending more money to counteract ambient lighting.

Wildfire fixtures are powerful enough to show an effect even with a lot of ambient light present. Every year at LDI—the trade show for the lighting industry—we prove the effectiveness of our fixture with ambient light present. Imagine the challenge of creating a UV effect with every exhibitor showing off their latest light fixtures!

M is for "UV Sensitive Materials"

It doesn't matter how much UV light you're throwing on the effect if the materials aren't UV sensitive. In fact, non-UV sensitive materials will appear black under a good black light with zero ambient light present. You want materials with the greatest possible sensitivity to long-wave UV. The more sensitive the material, the brighter it glows.

Because of this, we've formulated all of our paints to be super-saturated with UV-sensitive pigments. In other words, there's no possible way to pack more pigment into these paints, and that makes them the brightest you can possibly get!

In short, make sure you're using materials that are really responsive to black light. Stick with reputable manufacturers, or do some experimenting on your own. There are many naturally occurring or commonly available UV sensitive materials available. Check out the vignette "Everyday Fluorescent Materials."

E is for "Effect"

This is the last part of the equation—the result that happens when the four critical factors are working together. If you've done everything right, you should expect a very powerful UV effect. So always remember to use the FLAME formula every time you set out to create a "Wildfire Effect!"