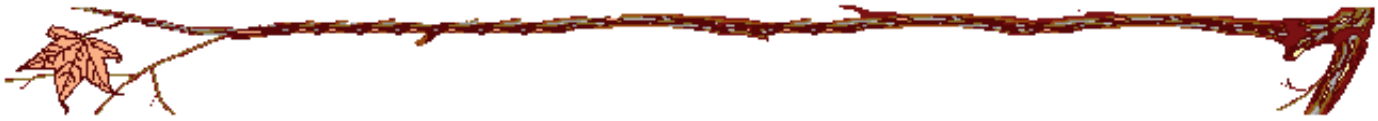
Read some of our fan mail.

Black Light

Here are some black light tips that you might find helpful...



Black Light Basics

Simply put, "black light" is a form of light that you can't see, but causes interesting effects in other objects. "Fluorescent" objects glow as long as they are illuminated with black light. "Phosphorescent" objects glow for a while after having been exposed to black light. They continue to glow even after the black light is removed, and are often called "glow in the dark" or "GITD".

"Ultraviolet light" generally refers to electromagnetic radiation with wavelengths in the range of 10 to 400 nanometers. This is subdivided into:

- UV-A = 315 to 400 nm.
  345 to 400 nm = used for "Black light" effects.
  315 to 345 nm = are used for suntanning (some sun lamps also generate UV-B)
- UV-B = 280 to 315 nanometers. Hazardous! Largely responsible for sunburn.
- UV-C = 200 to 280 nm. Dangerous! Used to kill germs.
- Vacuum Ultraviolet - 10 to 200 nm

There seems to be some disagreement on exactly how the spectrum is broken down. http://hps.org/hpspublications/articles/uv.html says: UVA (320-400 nm), UVB (290-320), UVC (220-290 nm), Far UV (190-220 nm), Vacuum UV (40-190 nm). Since the numbers aren't far off, we need not quibble.

Non-haunt uses of UV light include:

- "sun" tanning
- killing germs
- identification of rocks, gems, and minerals
- ozone production for disinfecting spa water
- identifying damage and repairs to collectible glassware
- identification of counterfeit stamps and bills
- invisible hand stamps for event readmission

We devote an entire page to generating and projecting black light.

Safety

Trace amounts of UV-B are necessary for the production of vitamin D in the skin. Overexposure to UV-B is known to be hazardous, as is just about any UV-C and shorter wavelengths.

We tend to think of UV-A as "safe", but this is only relative.

According to http://hps.org/hpspublications/articles/uv.html

> ... overexposure to UV-A has been associated with toughening of the skin, suppression of the immune system, and cataract formation. ...
>
> The photochemical effects of UV radiation can be exacerbated by chemical agents including birth control pills, tetracycline, sulphathizole, cyclamates, antidepressants, coal tar distillates found in antidandruff shampoos, lime oil, and some cosmetics. Protection from UV is provided by clothing, polycarbonate, glass, acrylics, and plastic diffusers used in office lighting. Sun-blocking lotions offer limited protection against UV exposure.

I consider the eyes to be the most important part of the body to protect from UV. Yes, UV can damage skin, but the eyes are most sensitive, and you only get one set.

Keys to safe use of UV are:

- Insure correct wavelength of UV
- Beware high-intensity sources
- Limit exposure

Insure correct wavelength of UV

Make sure that *any UV sources used for your haunt fall into UV-A*, preferably 345 to 400 nm. Lamps sold for entertainment purposed probably fall into this safe area. They should be specifically marked "black light".

The place to watch out is with oddball surplus equipment that might have been designed with germicidal or other purposes in mind!

Avoid UV lamps designed for rock-hunting; many minerals fluoresce under short-wave UV, and rock lamps are designed accordingly (some are switchable between long and short wave).

Never use unknown or suspect UV lamps for entertainment.

WARNING: Just because a light source is UV-A does not mean that it is completely safe. It just means that it is safer than the really nasty flavors of UV. UV-A can still cause damage and must be used judiciously.

Beware high-intensity sources

The danger is not all in the wavelength of the light. You must also consider the intensity.

Staring at a simple incandescent lamp will make you see spots for a few seconds. You can cause eye damage with "safe" wavelengths if the light is intense or the exposure long.

The problem with UV light is that *you can't see it*, so you don't say, "gee, that's bright, I'll look away." Instead, you see either nothing, or the dim glow of whatever non-UV that the lamp emits as a side-effect.

Limit exposure

Even if your light source is supposedly safe, play it extra safe: limit exposure and point the light at your effects, not your patrons!

If you have actors in a scene illuminated with black light, consider giving them sunglasses with UV protection. I'm sure you can figure out a way to work them into the scene; a vampire wearing stylish sunglasses sounds reasonable to me.

More safety info

Here are some web references to UV safety...

International Commission on Non-Ionizing Radiation Protection:

- Guidelines on UV Radiation Exposure Limits, Health Physics, Vol. 71, No. 6, pp 978, 1996. - http://www.icnirp.de/documents/UV.pdf
- Proposed Change to the IRPA 1985 Guidelines on Limits of Exposure to Ultraviolet Radiation, Health Physics, Vol. 56, No. 6, pp 971-972, 1989. - http://www.icnirp.de/documents/UV1989.pdf
- Guidelines on Limits of Exposure to Ultraviolet Radiation of Wavelengths between 180 nm and 400 nm (Incoherent Optical Radiation), Health Physics, Vol. 49, No. 2, pp 331-340, 1985. - http://www.icnirp.de/documents/UV1985.pdf

National Radiological Protection Board (NRPB):

- Advice on Protection Against Ultraviolet Radiation - http://www.nrpb.org/publications/

consultation_documents/con_doc_protection_against_uv.htm
- UVR from {white} Fluorescent Lamps - http://www.nrpb.org/radiation_topics/ultraviolet/uv_from_lamps.htm

Canadian Ophthalmological Society:

- Ultraviolet Radiation and the Eye - http://www.eyesite.ca/english/program-and-services/policy-statements-guidelines/UV-radiation-eye.htm

Ontario Ministry of Labour:

- ULTRAVIOLET RADIATION IN THE WORKPLACE - http://www.gov.on.ca/lab/ohs/uvrade.htm

Black Light Vendors

Here is a partial list of companies selling black light equipment and supplies...

Terror By Design

- Glow in the dark paint, tape, pigment powder.
- Invisible UV Crayon and paint.

Shannon Luminous Materials

- UV paints, dyes, and pigments.

Wildfire, Inc.

- UV paints, dyes, and pigments.
- UV lamps, including professional-quality floods and high-end fluorescents.

NOCTURN UV Technology

- UV paints, dyes, and pigments.
- UV lamps, including professional-quality floods.

Rosco

- "Clear Colour" - water-based paint, dries clear, fluoresces under UV.

Theatre Effects

- fluorescent black lights, battery, line-powered
- incandescent black lights
- mercury vapor black light floods

- Glow in the dark decorations, paint, tape, and makeup.
- clear/invisible UV-fluorescent paint, makeup, ink, crayon, powder
- opaque/visible/dayglow UV-fluorescent paint, makeup, posters

Home Depot

- shop-light fixtures
- black light bulbs in various sizes
- day-glow paints

Spencer Gifts

- Glow in the dark paints, decorations.
- Black light fluorescent paint, posters, toys.
- Black light fluorescent strobe.
- Fluorescent and incandescent black lights.

Altman Stage Lighting Co.

- UV spots and floods
- fluorescent black lights

JKL Components Corporation

- Tiny cold-cathode UV lamps. Described as "narrow-band", in several different wavelengths. Go for something 345 to 400 nm.

http://www.carolinastamp.com/inks.htm

- Invisible, black-light fluorescent inks, suitable for hand-stamps.

http://www.gamonline.com/catalog/uvfilter

- UV-blocking filter material

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You may be interested in these pages:

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