# A Guide to Light Graffiti
by Illum

# What is Light Graffiti?

Light graffiti (also called light writing, light painting, and light art) is simply long exposure photography using lights to create objects and add effects into the photo that are not actually there in real life. Unlike traditional graffiti, light graffiti does not involve vandalism since it is just lights in long exposures.
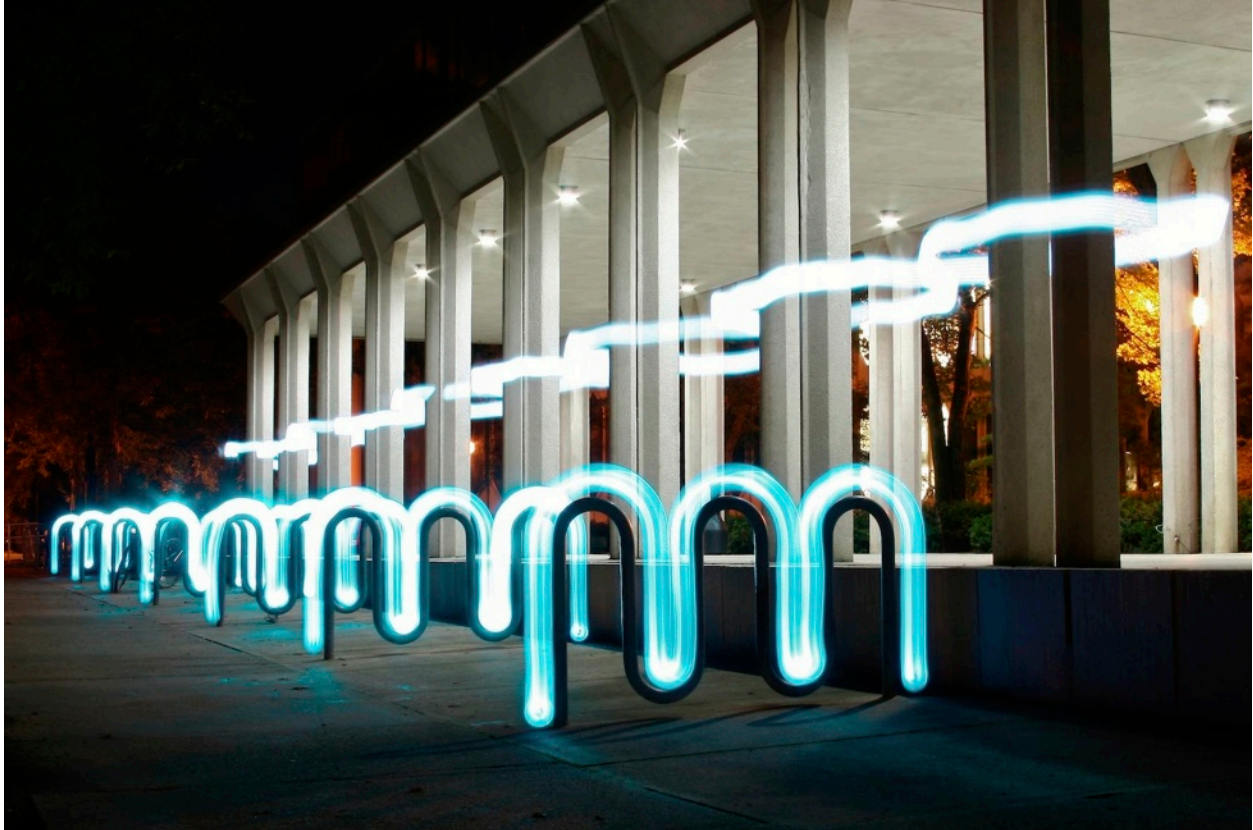
# Getting Started / The Necessities

## The Camera

A camera with long exposure capabilities is necessary for taking these kinds of photos. Digital SLRs, high end point-and-shoots, and film SLRs all have long exposure capabilities. Illum first used a Canon Digital Rebel XTi and then updated to a Canon 40D. An SLR (single lens reflex) camera is the best in our opinion; its BULB (in both digital and film SLRs) mode allows you to take an exposure only limited by how long your batteries can last (most of the time, many hours). Point-and-Shoot cameras typically can only take up to 15s exposures. This is okay, but you are extremely limited with what you can do.

## The Tripod

When taking long exposures, your camera cannot move or else it will show in the photo. A very sturdy, rugged tripod is recommended, but any free-standing tripod that supports your camera and does not shake will do.

## The Lights

**Traffic Batons** - come in different colors, usually between 1 and 2.5 feet long.
**Xenon** - makes a warm golden light.
**LED** - makes a thin precise line.
**Cold Cathode** - makes a thick line.
Roadside Flares
Bicycle lights
Spotlights
Camera Flash Units

The Light Junkies group on Flickr has a nice discussion topic about light graffiti tools. People have photos posted with explanations of what the tools are:
http://www.flickr.com/groups/lightjunkies/discuss/72157604793587461/

LightDoodles.com on how to make light pens: http://lightdoodles.com/pages/pens.htm

# Getting Started / The Settings

First, these three things listed here all work together in a delicate balance. I am not going to explain how they work together. If you are a photographer, you most likely already know. If you need an explanation, visit
http://www.kenrockwell.com/tech/shutteraperture.htm

## ISO

We typically keep the camera on ISO 100, especially if there is a lot of ambient light. Keeping it on 100 (or lower, if your camera can) reduces the amount of noise in your long exposure. For certain situations, a higher ISO of 200-800 will create different effects. This all depends on the surroundings. Testing this out is the best way to tell.

## Aperture

We typically keep the aperture closed down a great deal (a high number, 18 and up). This lets less light in which becomes very important when doing an exposure in areas with high ambient light or an extra long exposure. DOF does not come into play much here, so the only reason that we typically open up the aperture is to let more light in. In most shots, we never go under a value of 8.

## Shutter Speed

As a general rule, longer is better. When we first started, we did not have a remote, so the longest we could go is 30s. 30s is really not much time to add a lot of elements to a photo. We have since purchased remotes and used BULB mode which keeps the shutter open as long as you would like. However, if there is a lot of ambient light, only keep the shutter open as long as is necessary for your creation. For some tricks with shutter speed and your photos, check out the **Tips & Tricks** section.

# Technique

Pick a place where you can either have a dark background to do your art or, as we prefer, pick a place where you can integrate the surroundings into your photos. After you pick an area, setup your tripod (with your camera on it, of course). When you set your settings, be aware of the amount of ambient light that is in the area and about how long it will take you to do the photo. Focus on the area where you will be working. We recommend having someone stand with a flashlight lighting up their body in the

spot where you will be working and let your camera auto-focus on the person then put your lens or camera back into manual focus so that when you take the shot, the camera does not try to refocus (cameras have difficulty focusing in dark areas). We usually take a few test shots in order to see if the white balance needs to be corrected, then begin. We begin with marking out the viewing area. One person stands out in the general area where the shot is going to be taken and one person behind the camera looking through the viewfinder. The person who is not behind the camera should walk from the extreme on one side to the extreme on the other while the person looking through the viewfinder lets the walker know how far they can go to each side while still being in-frame. Mark it with an object or take a mental note. Now you are ready to take the shot. Open the shutter and be creative. If you do not like what you see, change your settings or try some things from out **Tips & Tricks** section.

# The Optional Additions

These accessories are not necessary, but they make life easier and your photos more creative.

## Remotes

Remotes make life much easier when doing long exposures. Instead of being limited by the amount of time that the camera will go up to (usually 15s or 30s) or by having someone hold down the shutter release with their hand for BULB mode, using a wireless remote allows you to be a good distance away and open the shutter and leave it open until you hit the button again. It gives you lots of control without having to set a timer and run to get in place.
We recommend the CACTUS remote. They are made for many different models of cameras and can work up to 15 meters (49.2 ft) away. They are all a pretty good price and can be purchased here: http://gadgetinfinity.com/home.php?cat=285

## Stencils

Using light stencils opens up doors in light graffiti that could not be opened any other way. Stencils make it possible to do very precise logos, lines, words, etc. Since we got the idea of using stencils from other people, we will link to their tutorials. They are very good and they deserve the credit, not me.

From the Light Stencil group on Flickr:

http://www.flickr.com/groups/594829@N24/discuss/72157603689346099/

From the Light Junkies group on Flickr (Check out the one from Churkinms):
http://flickr.com/groups/lightjunkies/discuss/72157605605898202/

From Foto-Net.de (in German):
http://www.foto-net.de/net/dyo/led.html

## Filters

Color Filters - Filters on your flashlights or flash units will change the color of light that is emitted. This lets you add different levels to your photos. We recommend making filters out of colored plastic (we use translucent plastic folders), buying colored gels, or ordering a Roscolux color swatch:
http://www.rosco.com/us/filters/roscolux.asp

ND Filters (for your camera lens) - When there is simply too much light, even at ISO 100 and f/32 (or your lens's minimum aperture), there is one thing left to do before shooting out some of the ambient lights (by the way, we do not actually advocate shooting out lights unless they are your own...we respect property rights). You can buy a ND (Neutral Density) filter to put on the end of you camera lens. The idea behind them is that they reduce light of all colors and visible wavelengths equally. If you want to know more, check out the Wikipedia article on them:
http://en.wikipedia.org/wiki/Neutral_density_filter
You can buy them from pretty much any photography equipment dealer. A quick Google search will pull up hundreds.

# Tips & Tricks

Before we get to our tips, here is another great tutorial from LightDoodles.com:
http://lightdoodles.com/pages/tutorial.htm

If there seems to be just too much light, use a Neutral Density filter. (see above)

There are two ways that we use. First, the easiest is to have your back to the camera, hold the light facing the camera, but to your side. Make you letters as if you were writing on paper.

The second way is to face the camera, have the light in front of you also facing the camera. You have to write from right to left and your letters have to be flipped horizontally 180 degrees. Practice as if you were writing on a fogged-up window for someone to read from the other side. It takes some practice, but once you get the hang of it, you can get pretty good at it and it will go pretty quickly.
One tip is to use the scenery around to make a mental grid of an area to write so that your letters come out correct and inline.
If writing backwards isn't your thing, you can write normally (just as you would be writing on a piece of paper) with both you and the light facing the camera, and then afterwards, flip it horizontally in a photo editing program.

Illum has also tried writing on walls with light. This looks like real graffiti and comes out pretty cool: [flickr.com/photos/illum/1560091419/](flickr.com/photos/illum/1560091419/).
We use a very bright, intense light to do this. We put the camera over to the side and back at an angle, then put the bright flashlight close to but not touching the wall, then proceed to write or draw as if it was a large canvas. No flipping of the letters is necessary here because you will be writing in the same way that the camera picks it up. In a lot of ways "writing on walls" can be easier because there is something there (actual lines if it is a brick wall) to gauge the size of your letters from. I encourage you to give it a try sometime.

Try incorporating the surroundings into your photos. Be creative.

Light up your surroundings with different colors. Filters on your flashlights or flash units will change the color of light that is emitted. This lets you add different levels to your photos. We recommend making filters out of colored plastic (we use translucent plastic folders), buying colored gels, or ordering a Roscolux color swatch:
[http://www.rosco.com/us/filters/roscolux.asp](http://www.rosco.com/us/filters/roscolux.asp)

Do a "see through" effect to your light art. Leave the shutter open for a significant amount of time after you are finished with your light design. In order for the background to show through, you need a fairly lit-up background. Light up the background with a flash after you are finished with the design, if needed.

Incorporate people into your photos. Make sure they stand very still and light them up with a flashlight or a flash unit. Turning the light off and then lighting them up in another place makes things interesting.

"Ghost imaging" is neat. This combines the see through effect with using people. (Look at the previous two items.)

Do some light graffiti over water. The water provides excellent reflections. This looks especially cool with colored lights.

Make light graffiti look like real graffiti: use intense lights to "write" on a brick wall. It looks like real graffiti! Check out the Illum photostream on Flickr for an example.
[http://www.flickr.com/illum](http://www.flickr.com/illum)

# Finding Inspiration

There are many light graffiti artists online. There are also some great Flickr groups that have great photos and great discussion boards for information. Here are some that we recommend.

The Light Junkies group: http://www.flickr.com/groups/lightjunkies/
Lichtfaktor: http://www.lichtfaktor.eu/
Light Painting - The Real Deal group: http://www.flickr.com/groups/lightpainted/
LightDoodles.com (UnklStuart on Flickr): http://lightdoodles.com/
DUCKTANK: http://www.flickr.com/photos/ducktankpix/
Tdub: http://www.flickr.com/photos/trevor303/
Recycle Bean: http://www.flickr.com/photos/recyclebean/
Night Lights: http://www.flickr.com/photos/nightlights
Churkinms: http://www.flickr.com/photos/churkinms/
Illum: http://www.flickr.com/photos/illum/
Night Photographer: http://www.flickr.com/photos/night_photographer/

Noctographer: http://www.flickr.com/photos/light_painter/
Lost America: http://www.flickr.com/photos/lostamerica/

A write-up by CultCase:
http://www.cultcase.com/2008/04/shine-in-dark-from-light-graffiti-and.html