

## Lights and Lamps #1 – Table Lamps User Guide

### Lights and Lamps Concept

The idea behind the Lights and Lamps project come from when I first started rendering in 3d. From the beginning, every time I saw a lamp, a street light, or a light fixture, I had always wanted to use them as the actual light sources they were supposed to represent. Unfortunately, that vision wasn't quite as easy as it first seemed. After years of trial and error I've finally found a way to, at least partially, bring my vision to life. While I can't turn any model of a light source into a light, I can at least offer you models of light sources that will realistically light up your scene. The ultimate focus of the Lights and Lamps models is to light your scene as realistically as possible (within the limitations of the software) while giving you as realistic a model as possible with a focus on clean light that renders quickly. The models are designed to work in DAZ Studio and also work in LuxRender via the Luxus DAZ Studio plugin.

### Area Light Shader

The Lights and Lamps models don't use any standard DAZ Studio Lights. Instead they use the Area Light Shader to turn a portion of the model into a light generating surface. These shaped surfaces, and some of the options available to the Area Light Shader, create a more realistic light source than any of the default lighting options. The only drawback to the Area Light Shader is that it doesn't show up in the preview window view. The Area Light Shader also requires a specialized dummy light called a Headlight Blocker to turn off the default lighting option in DAZ Studio because the program doesn't automatically recognize the shader as a light source when you hit the render button. Each Lights and Lamps model will automatically load up with a Headlight Blocker. If you load up multiple models, each will load up a separate Headlight Blocker. Only one Headlight Blocker is required no matter how many models are in the scene so you can freely delete any duplicate Headlamp Blockers from your scene.

### Table Lamp Basics

The Table Lamp models come in four different sizes, from a full sized living room lamp to a tiny lamp you'd put on your bedside table or desk. The models were based around a standard A19 light bulb and include presets to simulate most of the common light bulb wattage/power ratings used in your average lamp. Each size of lamp comes with a different strength light. The tiny lamp loads up with a 40watt bulb, the small with a 60watt, medium with 75watt and large with a 100watt bulb. You can use the included presets to put any strength light bulb into any size lamp as you see fit but keep in mind that each model was designed to use a specific light bulb strength, and how the lamp looks can change drastically with a different strength bulb.

### Light Models and Light in DAZ Studio

When used in LuxRender, the lamps look and light your scene as you would think they should, but DAZ Studio doesn't handle light in quite the same way. The biggest difference is that DAZ Studio doesn't natively support the fact that light 'bounces' from one object to another. So while LuxRender and the real world the light generated by the light bulb bounces off the inside of the lamp shade and then off the body of the lamp or the surface under the lamp and so on, in DAZ Studio the light hits the inside of the

shade and just stops. To help compensate for this, there is a secondary (invisible) light source inside the light shade. This light is setup to only work in DAZ Studio as it is not required in LuxRender. While this secondary light helps create the illusion of a realistically lit lamp it doesn't cast light into your scene as it would in the real world. There are several different things you can do to compensate for this. One is to add additional lighting (like a spot/distant light or additional Lamps) to fill out the scene. Generally speaking a single lamp normally isn't enough by itself to light up a room all by itself. The second is to add an ambient light source (like an UberEnvironment or Advanced Ambient) set to a low value to help create the illusion of a single light source. To add to these options I also came up with three different lighting setups (default, full falloff and partial falloff) that you can choose from. Each one has its own strengths and weaknesses. The Full Falloff model creates the best looking lamp but it doesn't cast much light beyond the immediate vicinity of the lamp itself. It is best used with some additional lighting in the scene to help fill it out, unless you are looking for an extremely noir look. The Partial Falloff model casts the most light into the rest of the scene but the lamp itself isn't as well lit as it should be, and it's the least realistic lighting of the three models. The default setup is a compromise between the other two light models. It doesn't light the lamp as well as the Full Falloff model but it's better than the Partial Falloff model. It doesn't cast as much light as the Partial but its more than you get with the Full model. Each of the light model presets have the default LuxRender setting installed so that you can always get the same results in LuxRender no matter how you have the lighting set up in DAZ Studio.

### **The Lamp Shade**

The lamp shade is the most subjective part of making the lamp model look realistic. The biggest part of the problem is the myriad of fabrics and designs that are used in real world lamp designs. Shades range from almost completely transparent to totally opaque and everything in-between. In the end I decided to recreate what I think of as your average semi-transparent lamp shade. It mostly blocks all the light created by the lamp but also has that signature 'glow' to it. This default look might or might not be just how you think a shade should look. To help you get the result you want, there are presets that allow you to quickly and easily change either the opacity or ambience of the lamp shade. The lamp shade material presets were designed to work on any or all of the lamp models but you might find that the default settings aren't perfect for each combination of lamp/lamp shade shape/light bulb strength. Generally the higher strength light bulbs require lower ambience to achieve the proper 'glow' effect.

To help recreate all the different sizes and styles of lamp shades that you can buy for a real world lamp, each lamp model includes 5 different morphs to independently change the slope, curve, height, width and position of the shade, without affecting the body of the lamp itself.

### **Shaders**

Also included are a set of universal shaders that can be used on any surface you choose but they have been specifically optimized to be used on the included lamp models. Some modification may be needed if you use them on a different surface/prop/model. Each shader also includes LuxRender material presets. Most of the surfaces in the promo pictures use one of these shader presets.

