

Lighting Types and Settings

When you create a scene in Blender, you start with a few basic elements that will include a camera, but may or may not include a light. Remember that what the camera sees is what will render out as a picture or movie depending on what you tell the program you want as a final output. To get a simple rendered view, press the “F12” key. If the picture is black, you do not have a lamp or the lamp settings or placement is incorrect. To exit the render window, press the “Esc” key.

In most cases, you will need more than one lamp in order to properly illuminate your scene. Most scenes usually require 3-4 lamps. Be careful not to use too many lamps! The different types of lamps available for you to use are as follows:

Point- Basic Blender Lamp- shines all directions.

Sun- Provides even angle of light, regardless of placement from objects.

Spot- Shines a direct angle of light.

Hemi- A wider light, much like area lights.

Area- Provides large area lighting (like a classroom). Can be scaled.

In traditional Blender rendering, only spotlights are able to cast shadows. However, with Ray-tracing all lamps can cast shadows.

Lamp Settings:

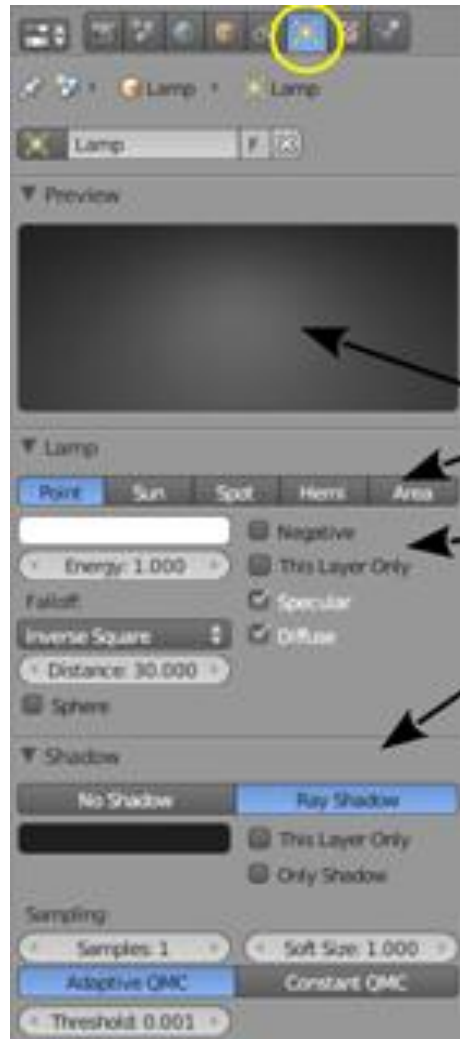
To create a lamp, position the 3D cursor in a desired location and press “Shift-A” and select Lamp, then type. The lamp will be placed on the screen. You now have several options to select. With the lamp selected, click the Lamp button to bring up the adjusting options. Here’s what you see: These are your basic settings. Sun and Spot give you some different options. The Sun can actually be used to simulate sky and atmosphere variations.

Preview Window: Sample of your lamp settings.

Lamp Type: Can be changed any time. You will get different options depending on the lamp selected.

General Settings: This is where you select the color of the lamp, its energy (brightness), the distance it shines, and a few other options.

Shadow Options: Shadow style, color and quality.



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Spotlight Settings:

Spotlights are unique in that you can simulate a foggy scene with them and cast shadows in the traditional Blender program. Ray-tracing (discussed in a later chapter) can cast shadows for all lamp types, but because of the more complex rendering calculations that need to be performed, renders much slower. If you watch professionally made animations on T.V., you will see that ray-tracing with reflections is not always used because of the rendering time. It is only used when needed. You can do the same thing. Again, we will focus on using the Buffer Shadow settings. Ray-trace shadows will be discussed later. Here are your spotlight settings:

Shadow Type: Buffer is the old style and fastest.

Shadow Color: Adjusts the color of the shadow.

Buffer Type: By holding your mouse over these buttons, it will tell you the benefit of each style (i.e. Deep supports transparency and better filtering, but slower).

Filter and Sample: These settings can be used to refine your results, but could add to your render times.

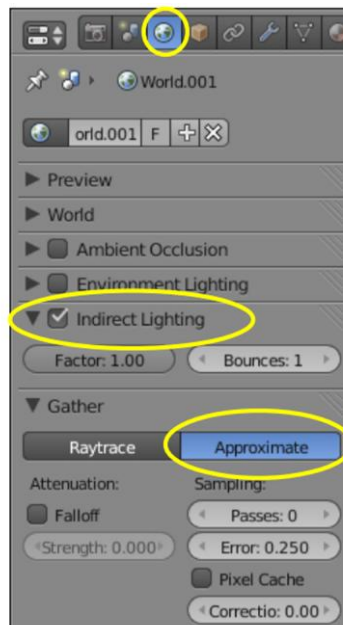
Clip Start and End: Gives a range for calculating shadows. Represented by a line down through lamp. Keep this line as short as possible to give the best shadowing. New to this release is the Autoclip options to set these for you.

Spot Shape: Set the Angle Size, Blend (edge softness), and Shape (round or square). You can also give it a haze with the Halo settings and intensity.

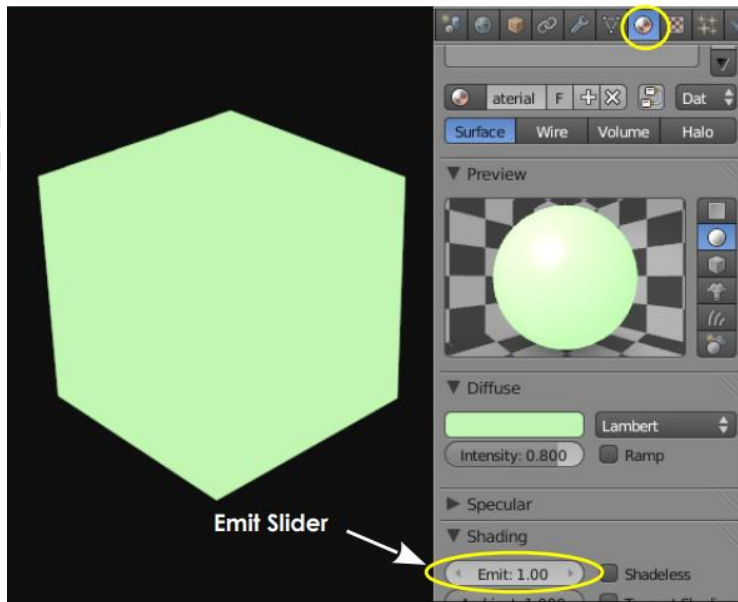


Indirect Lighting

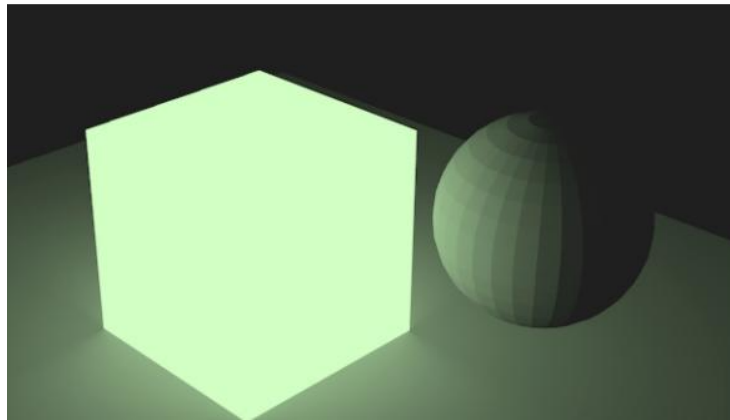
In Cycles, you would use an emission shader to make an object emit light, but in order to achieve this effect in the internal render engine, you will need to use indirect lighting. Indirect light is light that bounces off other objects, like real life. There has always been an Emit option in the Blender material settings so an object could glow, even when light wasn't hitting it, but it could never light up things around it. It now can. First, let's set up the material with the Emit feature on. For the scene below, I have removed all lamps and the default World from the scene. The only reason why the cube glows in the render is due to the Emit setting. The plane that it is resting on is not illuminated. This is what Blender could do in older versions. In order to turn on indirect lighting, I need to add a World back into the scene. I set the Horizon and Zenith colors to black for added effect. In the World settings, check the box for Indirect Lighting. Find the panel labeled Gather and turn on Approximate. Check and open the panel. You will see a Factor (influence) slider and Bounces, which will control how many times the light bounces. A rendered scene now shows reflection on the floor plane and a sphere sitting beside the cube, invisible before indirect lighting was applied.



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