

itDD

_Introduction to Techniques in Digital Design

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Final Gather

Mental Ray's Final Gather illuminates your scene by taking samples of light from two potential locations:

1. Light emitting from nearby surfaces whose materials have an **Ambient Value** and/or **Incandescent Value** assigned to them
2. The color of the **Environment** assigned to the camera.

Final Gather takes samples from the **Environment** color, which is specific to each camera, for lighting purposes. Maya uses the color of your Environment (by default this is set to black) to determine the color and brightness of the Final Gather lighting. If there is no other light source in the scene, the **Environment** color will need to be changed to a value other than black.

Changing the Color of the Environment:

1. In the **View Panel** that is to be rendered (Top, Side, Front, Persp,...), Click *View > Camera Attribute Editor*
2. Under the **Environment** pull down menu change the **Environment** color to something other than black. The lighter the color the brighter the scene will be. Grey, white and very light blue are common color values assigned to the **Environment**.

The number of **Final Gather Rays** determines the quality, because it specifies how many Final Gather samples will be calculated for your scene. The higher this number is the longer the rendering will take. The **Max Radius** value determines the maximum distance apart that Final Gather samples can be from each other. The **Min Radius** value determines the closest they'll be taken from each other. The default **Min Radius** and **Max Radius** settings of 0 and 0, let Mental Ray decide automatically what it thinks are the best radius settings, based on the size of your scene. Usually, the **Max Radius** setting will be about 10% of the size of your scene, and the **Min Radius** is 10% of the **Max Radius**.

Final Gather creates light by sampling **Objects** and the **Environment**, so if we have a really bright object in our scene, Final Gather will sample that object and apply its brightness to other objects, essentially making the object a light source. This effect works very well, the only downside is that you need to have quite a lot of Final Gather rays in your scene for the effect to look smooth, which can mean long render-times.

Creating an Object Light Source:

1. Create a material that will be used specifically for this **Object Light Source**
2. In the material's **Attribute Editor**, click on the **Color's** color sample. Make sure that our color palette is in **HSV Mode** (H-Hue, S-Saturation, V-Value).

3. To control the brightness of the material (in turn the object) alter the **V-Value**.
4. The number of **Final Gather Rays** may need to be increased to accommodate the Light Emitting Object.