

These features are a lighting designer's dream... to have ultimate control of a light source with just a push of a button.

These two check boxes, located in the Properties tab of the Light Info window, direct a light source to behave in 1 of 3 ways.

With both checkboxes on, a light will both illuminate and cast a highlight, or a hotspot, on the object — all at once....





If Enable Highlight is checked and Enable Illumination is unchecked, then the light source will only cast the highlight or hotspot on the object. It will not illuminate the object.

This is useful for controlling the specular highlights on glass or metallic surfaces....

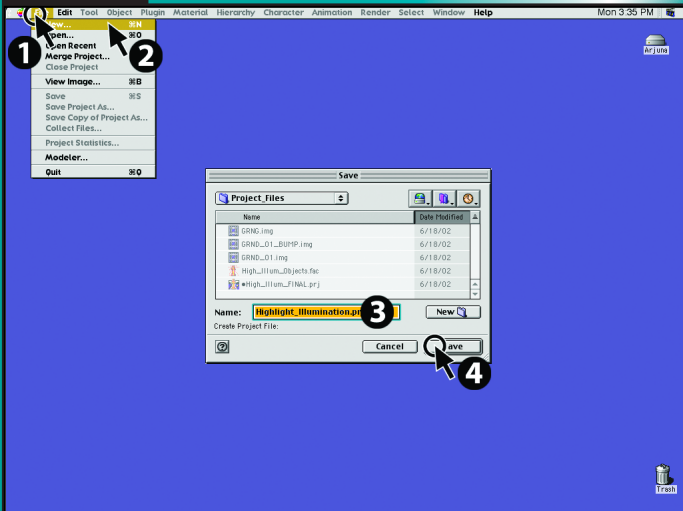




If the Enable Highlight is unchecked and the Enable Illumination is checked, then no highlight or hotspot will be cast from this light source upon the object or objects. It will only illuminate them. This is useful when you don't want a specular highlight or hotspot from the light source.

Now that we've briefed you on these, let's actually run through them and see them in action....





Launch Universe Animator.

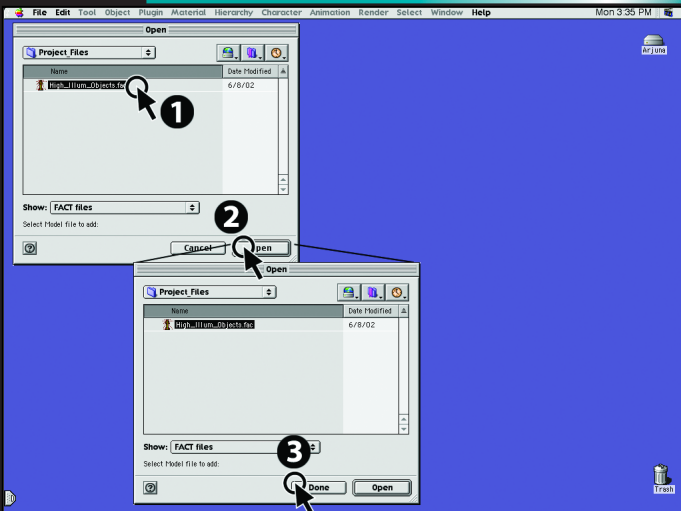
Press **[CMD/CTRL+N]** to start a new project.

When Animator prompts you to name and save this new project, name it "Highlight\_Illumination.prj" file, then navigate to the Highlight\_Illumination\_Tutorial folder and save it in there.

Note: Throughout this tutorial, Macintosh keyboard commands are indicated in **red**. Windows keyboard commands are indicated in **blue**.







After saving, you will be prompted to load your FACT files into this new project.

Locate the High\_Illum\_Objects.fac file and **[CLK]** Open.

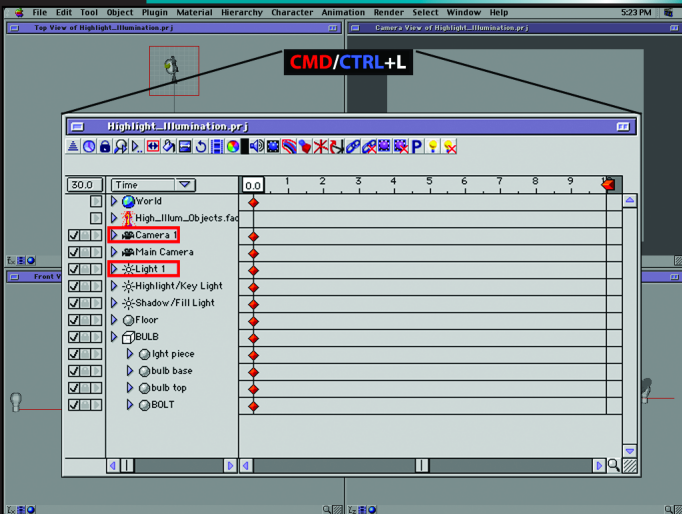
You will then be asked to create a hierarchy of the objects contained in this FACT file. Since we want them separate, **[CLK]** the Separate button.

If there were any more models to add, you could continue adding them into the project, but for this exercise, there aren't, so **[CLK]** the Done button.



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## Removing Unnecessary Objects



Animator then generates the scene loosely based on the size of the FACT file we loaded.

Before we proceed, we need to remove two unwanted elements — a Camera and a Light.

Open the Project window [**CMD/CTRL+L**].

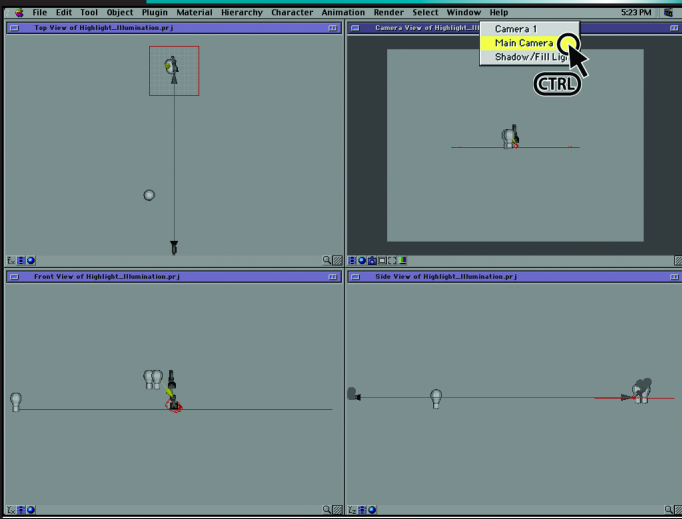
Animator defaults to adding a Light and a Camera into every new Project file. Since our FACT file contained a prebuilt Camera and Light, we do not need the default Camera and Light in our scene.

But before we delete the camera, we need to switch our viewing angle from the default camera to the Main Camera...



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## Switching the Camera View



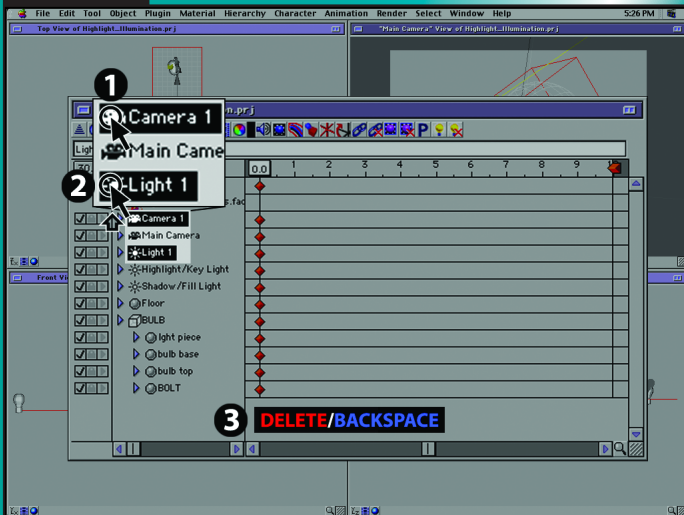
In the Camera View window, **[CTRL/RIGHT+CLK]** on the Camera View window header bar.

In the pop-up menu, select Main Camera.

The Camera View window should now be looking directly at the light bulb, slightly looking down at it.

Now we can delete the default Camera and Light....



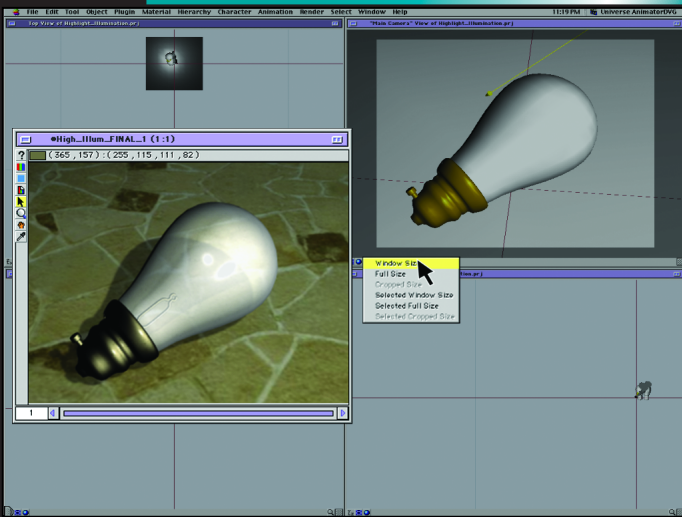


So, in the Project window, **[CLK]** on Camera 1 and **[SHIFT+CLK]** on Light 1, then press the **[DELETE/BACKSPACE]** button.

You should only see the following in the Project window : World, High\_Illum\_Objects.fac, Main Camera, Highlight/Key Light, Shadow/Fill Light, the Floor object, BULB Effector, and the 4 components that make up the bulb: light piece, bulb base, bulb top, and BOLT.

Now on to the exercise....





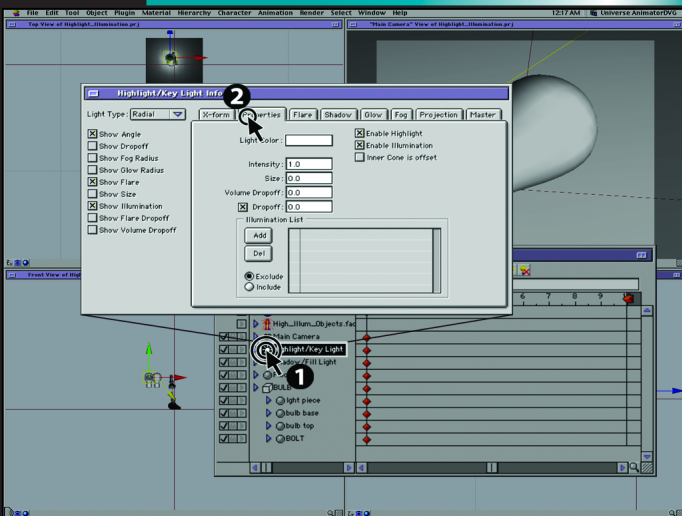
First we will render a snapshot of our scene.

In the lower left of the Camera View window, **[CLK]** on the Snapshot button and select Window Size.\*

Leave this render open to compare it with our other renders. Move it above the Side View window, where it can be seen, but is out of the way.

Here's our setup. We have the light bulb and the surface it's on. We have 2 lights that are illuminating the bulb from almost the same location, but not quite... the reason for that is that I did not like the shadow that was being cast from the Key light, so I turned off the shadow casting ability of the key light and added a new light at a lesser intensity to cast the shadow. And as an added bonus, this light nicely filled in the glass element of the light bulb. \*We will be doing a lot of test renders, so remember this action.





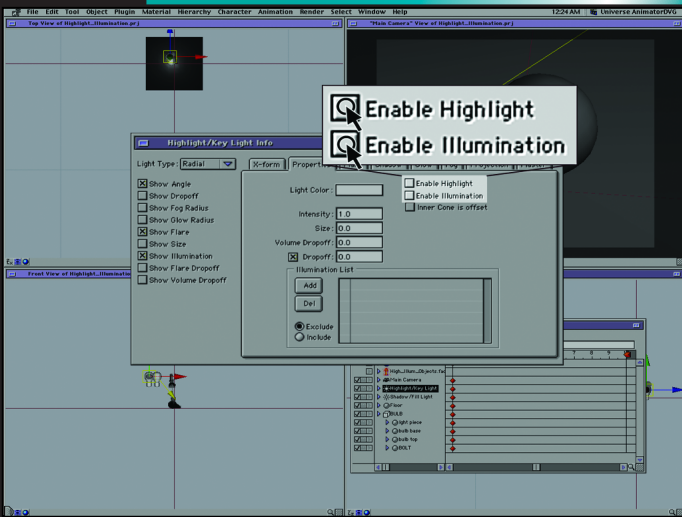
In the Project window, **[DBL+CLK]** on the Highlight/Key Light.

In the Light Info window, **[CLK]** on the Properties tab.

Most of the main light properties are located in the Properties tab.

Note: You may want to position the Light Info window above the Top View window, since we will be frequently using this window, as well as rendering snapshots.



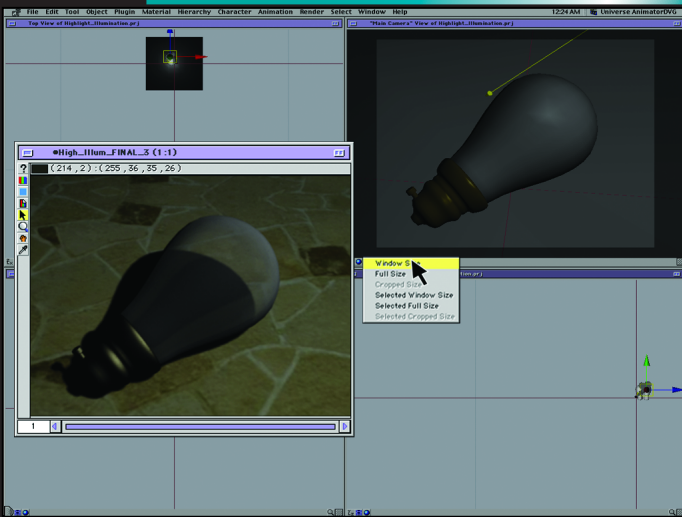


Uncheck both the Enable Highlight box and the Enable Illumination box.

Note: You should notice that our scene went almost black when we unchecked these boxes (our fill light is still illuminating the scene). In essence, we just turned off this light source. So it is neither illuminating nor highlighting the scene in any way.

Important Note: As a reminder, checkboxes and radio buttons are not animatable. So you cannot use this feature for animation purposes. There are other ways to turn a light on and off, one of which is discussed in the surfacing tutorials (the luminance tutorial).





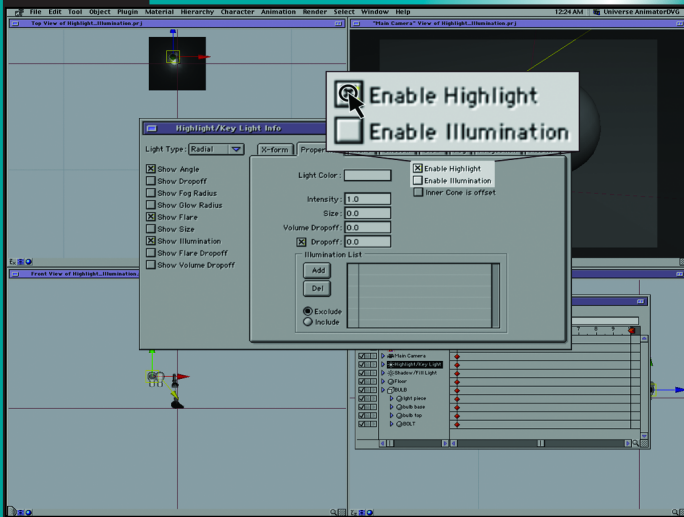
In the lower left of the Camera View window, **[CLK]** on the Snapshot button and select Window Size to render a snapshot.

Compare this render to our first render.

As you can see, our light bulb looks rather... dull. What you do see is our secondary light illuminating the scene very subtly. We will talk a little bit about what this light is doing, but for now we will concentrate on the Highlight/Key Light.



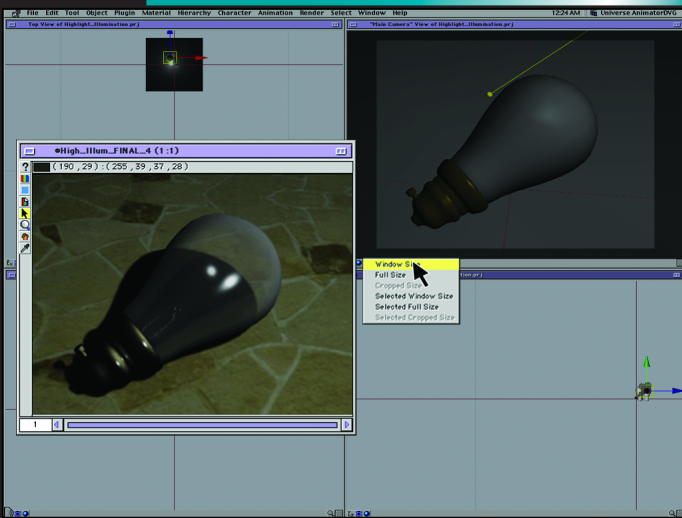




In the Light Info window of the Highlight/Key Light, **[CLK]** on the Enable Highlight checkbox.

We now told this light to only cast Highlights on the objects that this light is illuminating. We did not tell it to illuminate the objects, just cast the highlights.



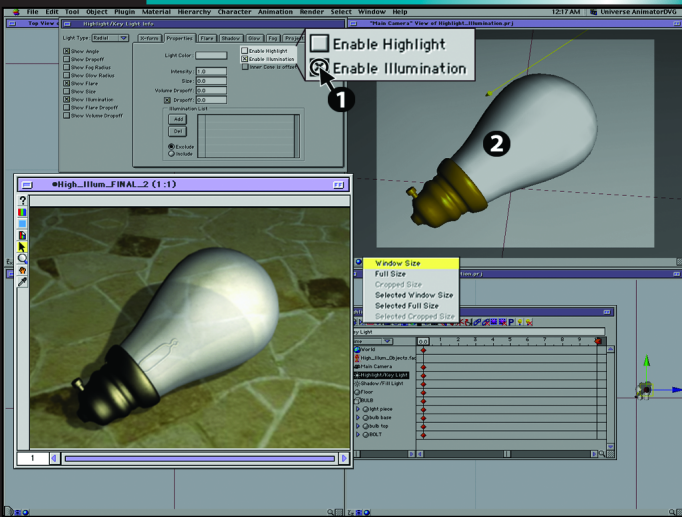


In the lower left of the Camera View window, **[CLK]** on the Snapshot button and select Window Size.

Note: Notice that only the hotspot of the light, the highlight, is now visible.

Off Topic Note: In some cases, you may have light(s) that are giving you perfect highlights, but overpowering illumination. Since you have complete control in the digital realm, you can set some light(s) to only cast highlights on the object, and set other light(s) for illumination only.



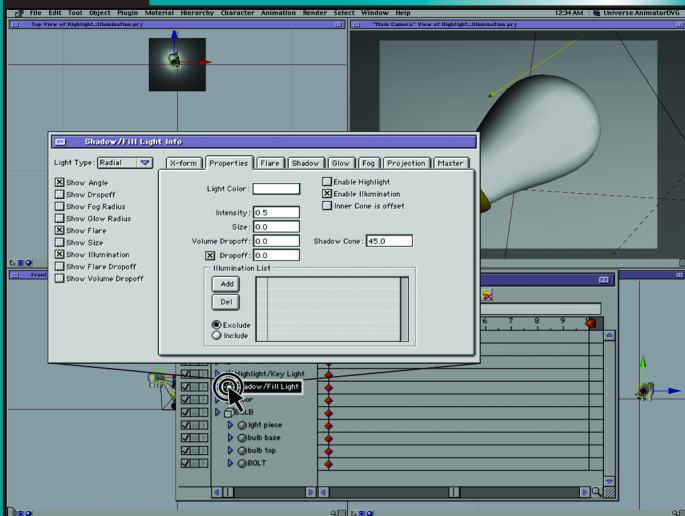


Back in the Light Info window of the Key Light, uncheck Enable Highlight and check Enable Illumination.

Render out a snapshot.

Kind of flat, but it's now illuminated. As you compare this render with our previous renders, you can see how Illumination and Highlight work together. Illumination will give you an overall fill - a nice soft, even light with no intense area. It is very similar to an ambient light, but with more control. The Highlight will add a little zest, pop if you will, which defines the surface of the object.



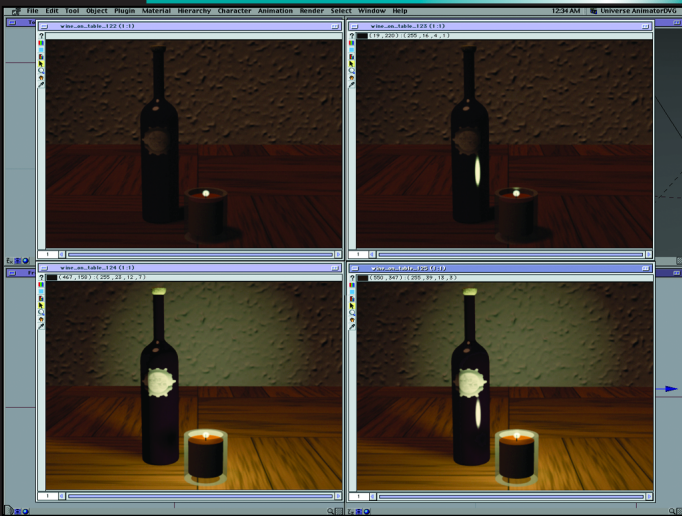


In the Project window, **[DBL+CLK]** on the Shadow/Fill Light.

As we mentioned earlier, this light is doing two things... it is casting a shadow that is much more pleasing than the shadow cast from the Key Light and it's providing a nice even illumination to the scene because we reduced the intensity of this light. But what is special about this light is that it is set to only illuminate the scene. We have unchecked the Enable Highlight option since we did not want double Highlight hits from our light source.

When doing any kind of product simulation shots (to achieve the look you or the director are after) you may find it very handy to have one or two lights in almost the same place but with each light set to perform a specific function.





Separating the Illumination and Highlight from a light source can be a huge benefit in lighting a scene. This is especially useful in glamor shots involving glass or metallic surfaces (cars)... but it shouldn't stop there. Most surfaces have some sort of specular attributes, and you may need two separate light sources to help pop a specular hit, or to subdue it.

