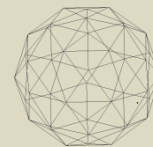


Basic 3D animation using Blender

SKANI101x



Lighting

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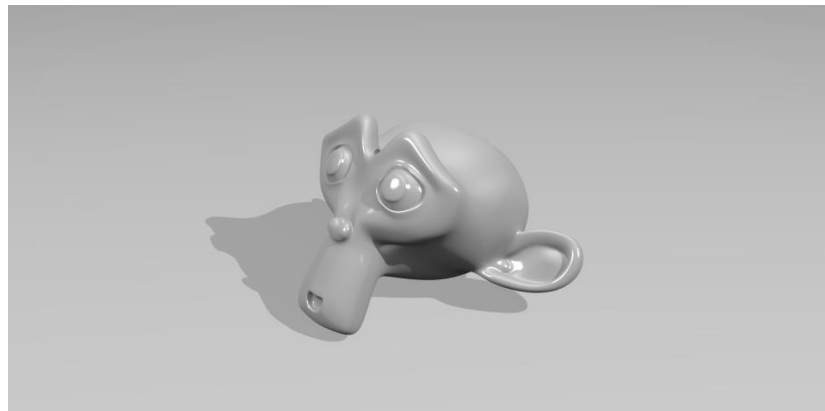
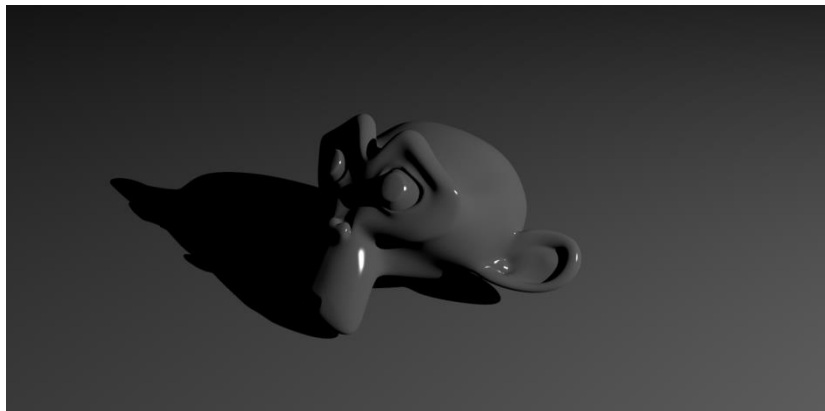
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Outline

- Lighting
- Types of lights in Blender
- Common parameters
- 3-point lighting setup
 - Key light
 - Fill light
 - Back light

Lighting

- It is a very important topic in rendering, standing equal to modeling, material and textures.
- An accurately modeled and textured scene will yield poor results without a proper lighting scheme, while a simple model can become very realistic if skilfully lit.



Lights in Blender

Blender comes equipped with five different light types, each with its own unique strengths and limitations. Here are the available lights:

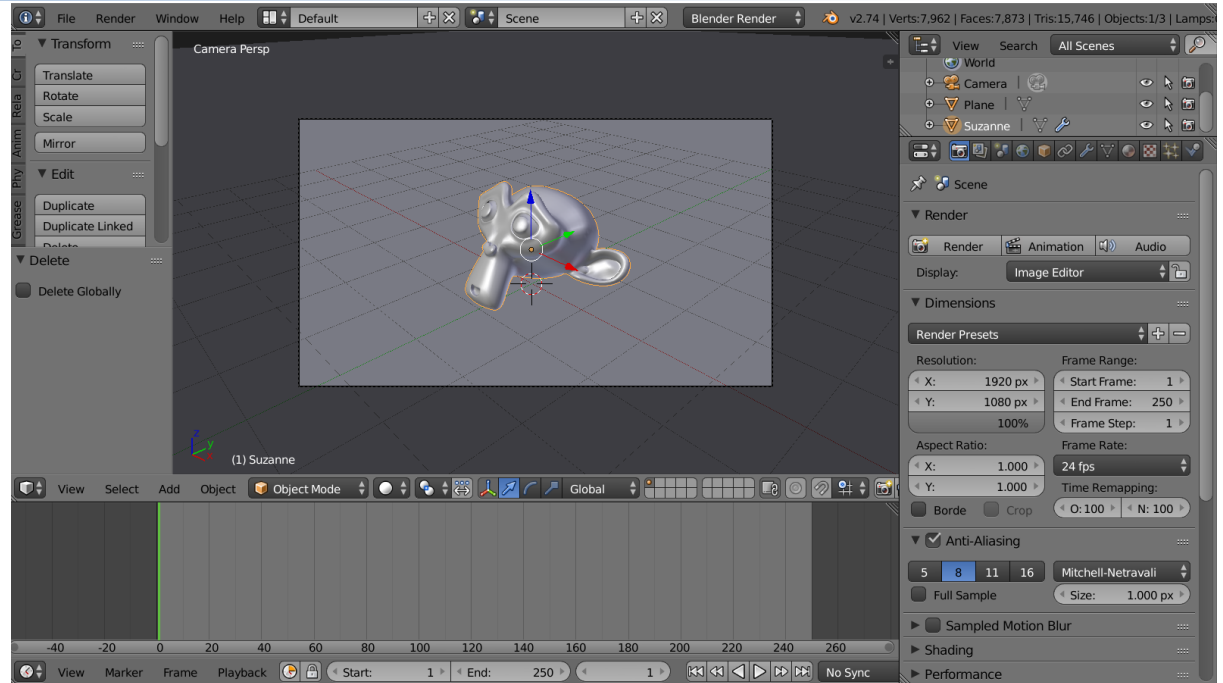
- **Point** is an omni-directional point light source, similar to a light bulb
- **Spot** is a directional point light source, similar to ... a spot
- **Area** is a source simulating an area which is producing light, as windows, neons, TV screens
- **Hemi** simulates a very wide and far away light source, like the sky
- **Sun** simulates a very far away and punctual light source, like the sun

Lights: Common parameters

Demo file

Download and open the
lighting.blend demo file

- Render (F12)



Tip

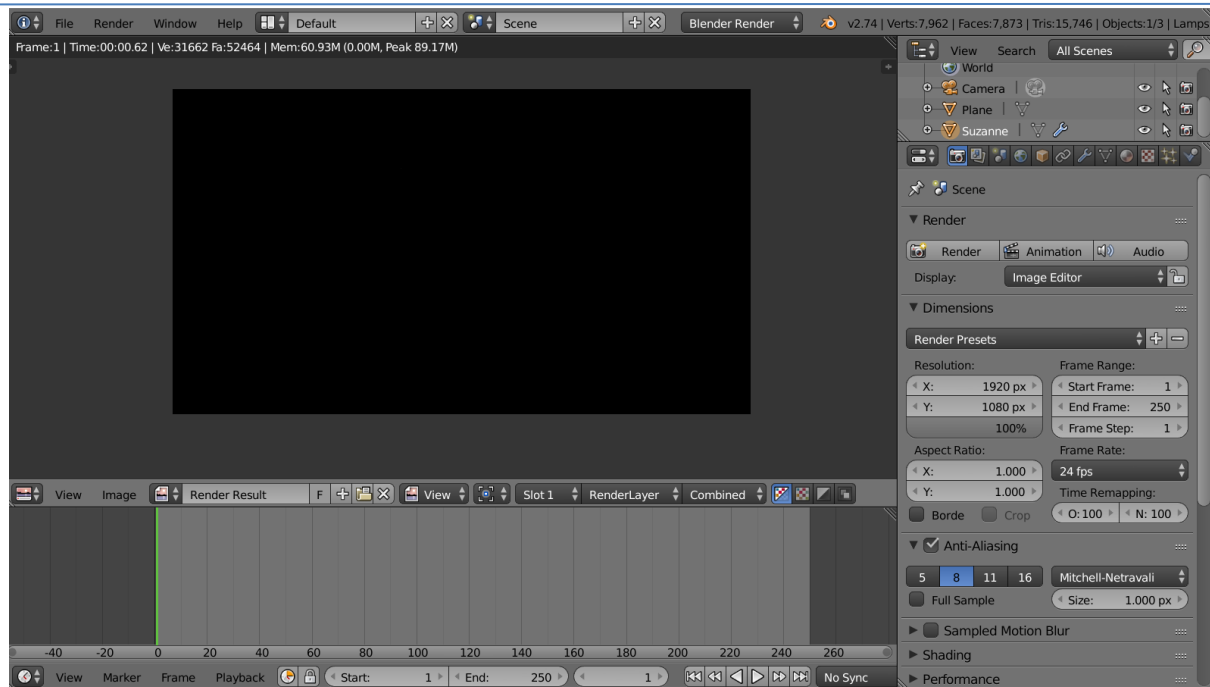


Blender is a virtual 3D environment, it requires a light source to illuminate a scene.

Without any light source the render output will be blank.



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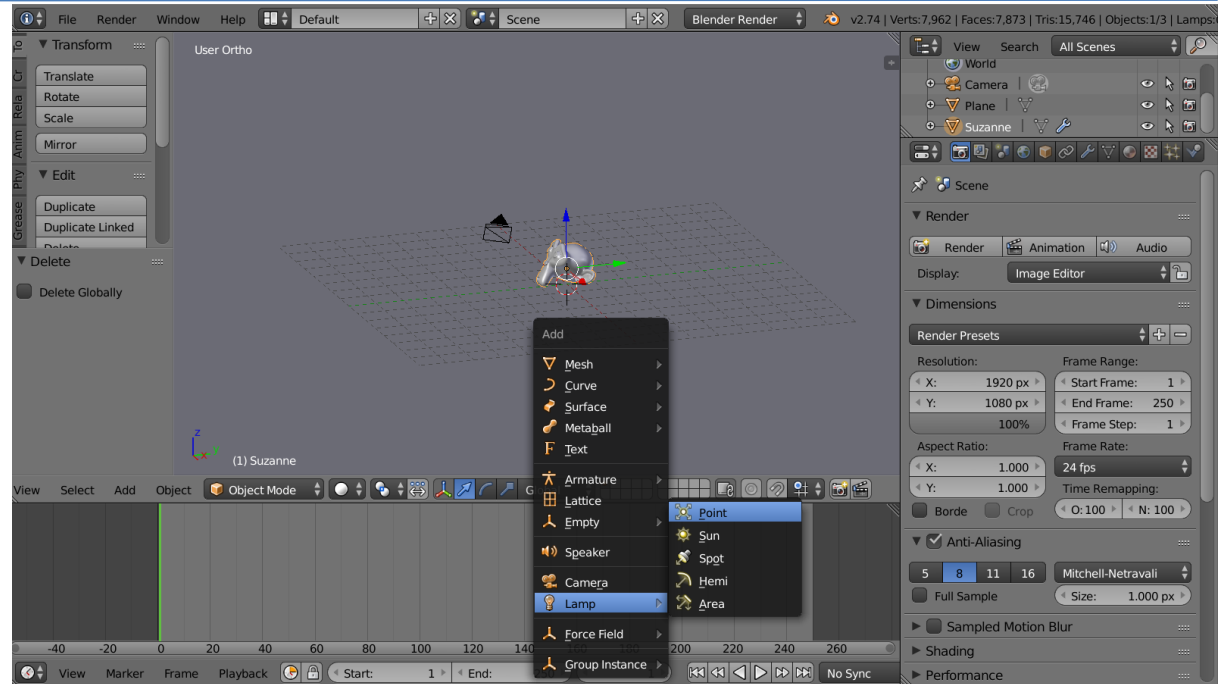


Add Lamp

- Add Lamp (Shift + A)
- Select Lamp > Point

Tip:

Check the position of the 3D cursor, press Shift + C to get the 3D cursor back to the origin



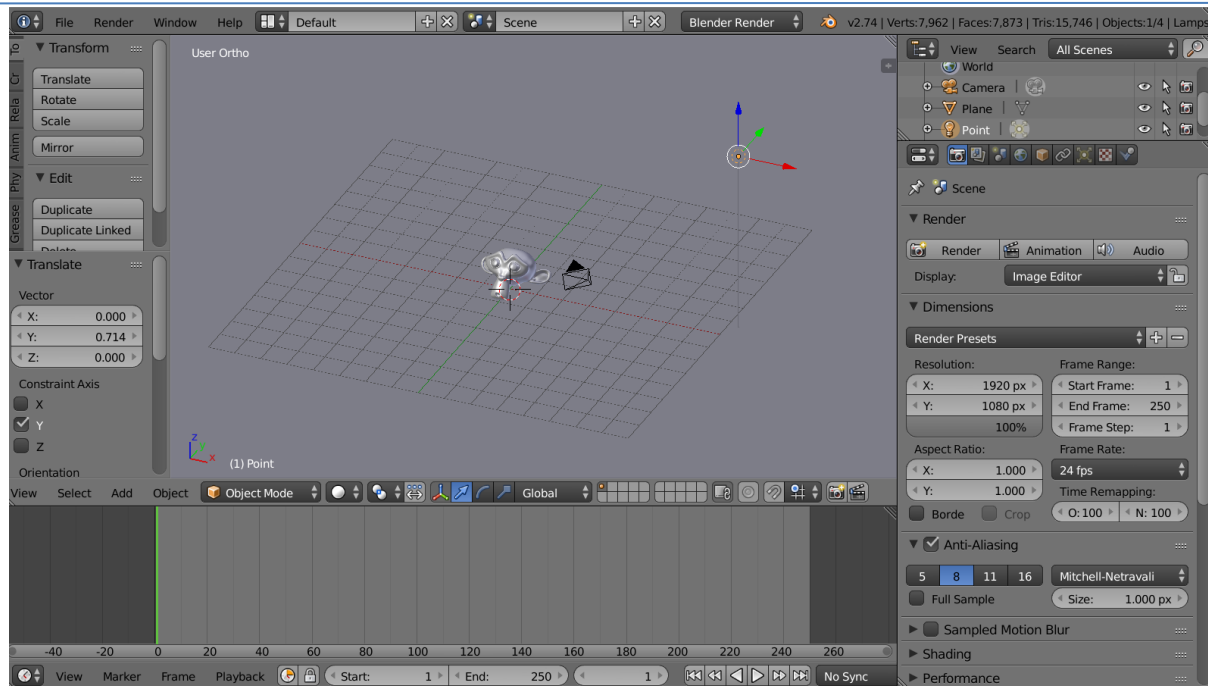
Change Lamp position



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Move the lamp beside the camera

- Select the Lamp
(Right click)
- Move the lamp
(G + move mouse or use 3D manipulator)

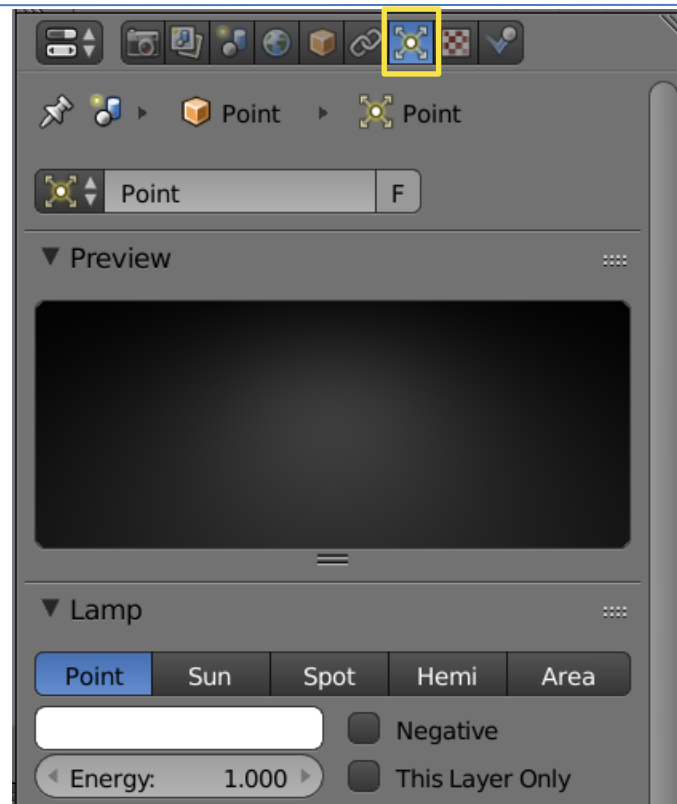


Lamp properties

Go to the Lamp properties panel in the Properties window.

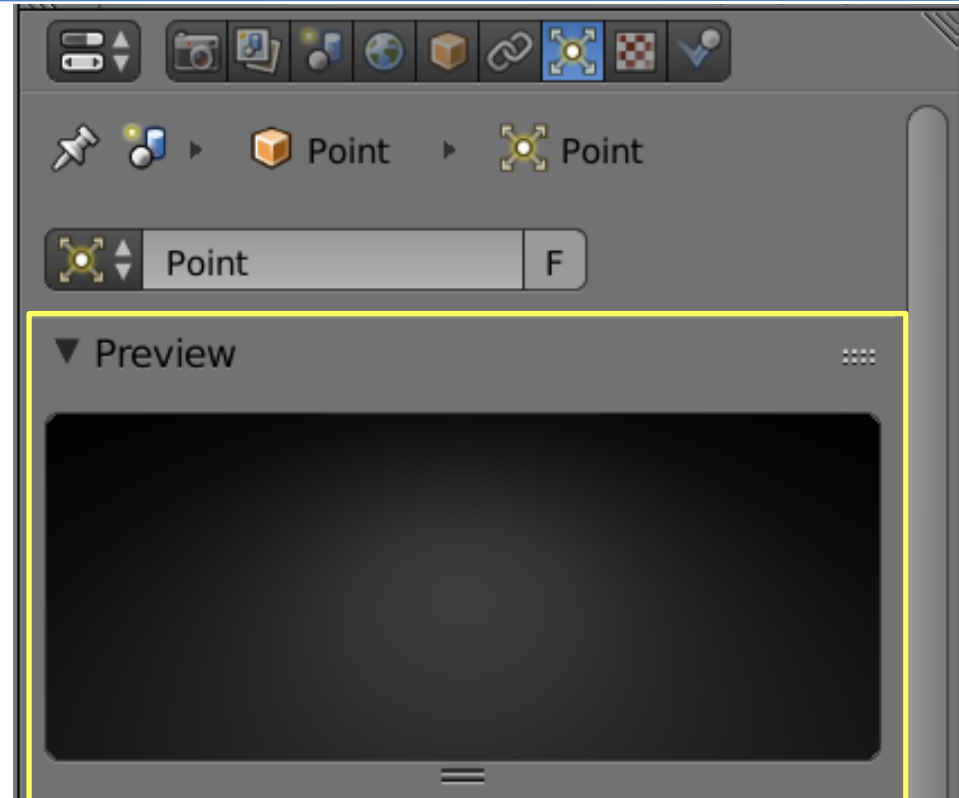
Tip:

This window is only available when the Lamp is selected.



Preview

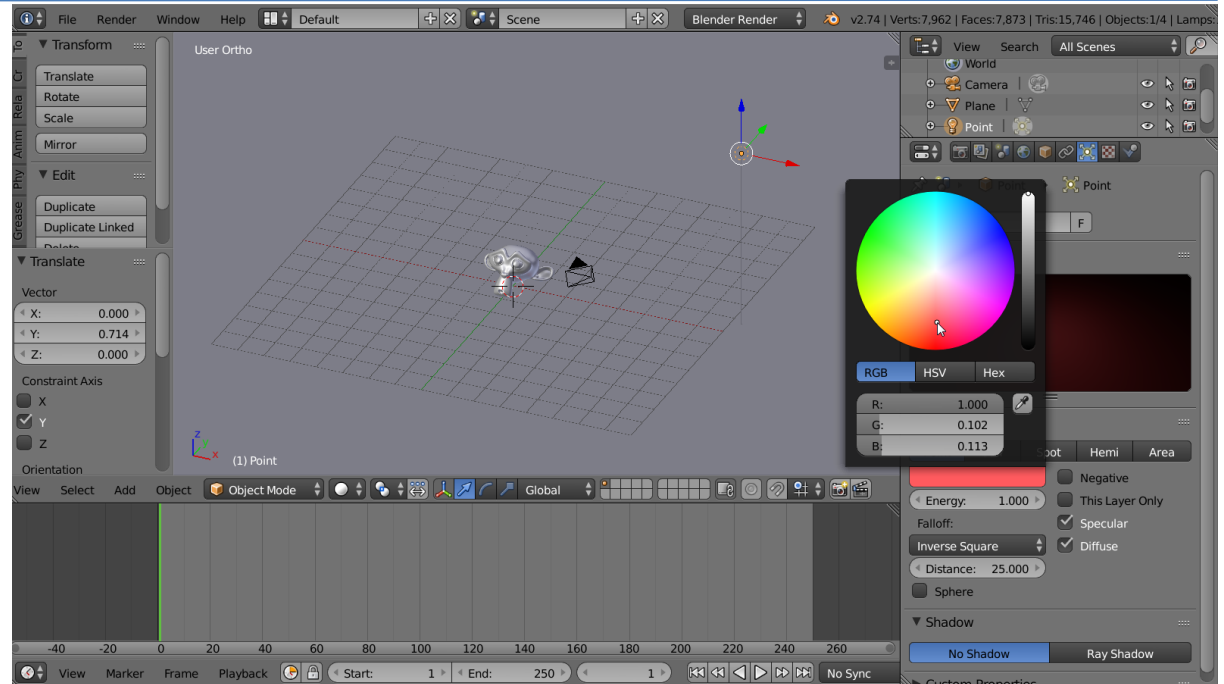
A quick preview of the light settings



Colour

The colour of the light source's illumination

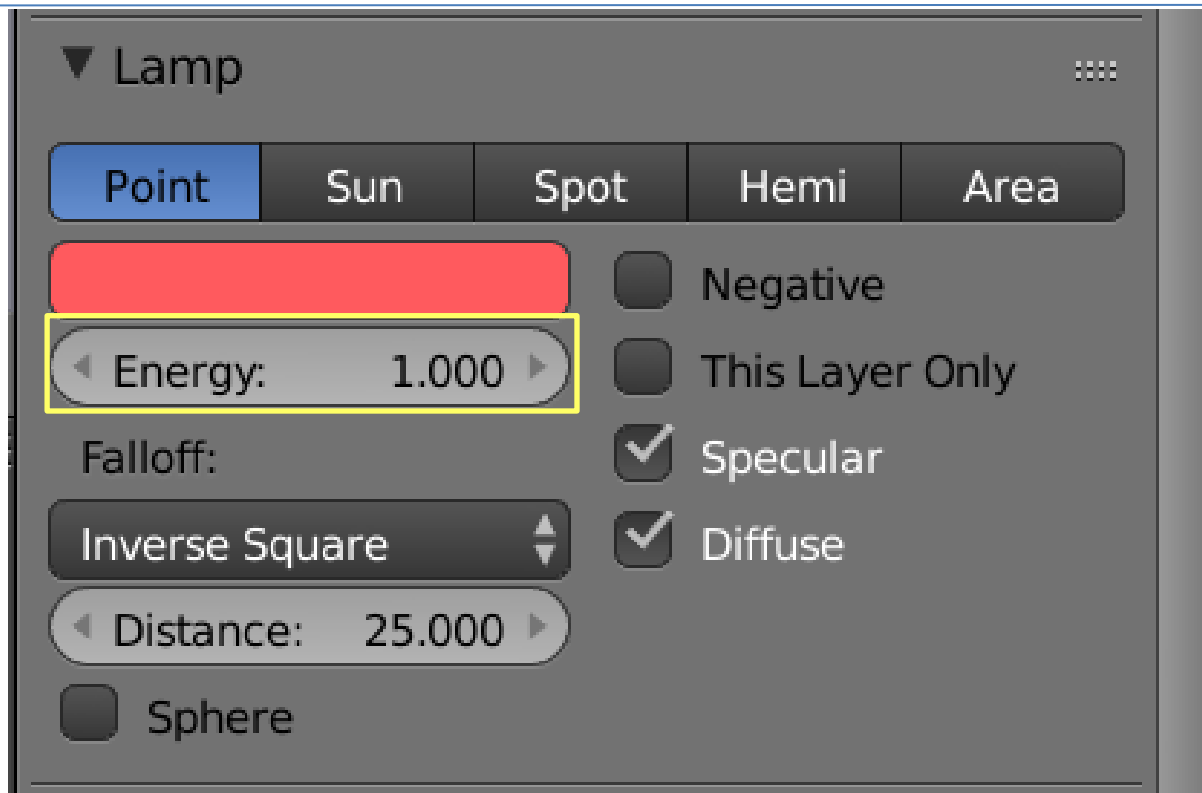
- Click on the colour bar to open the colour palette
- Select the colour



Energy

The intensity of the light source's illumination (from 0.0 to 10.0)

- Left click and enter the value

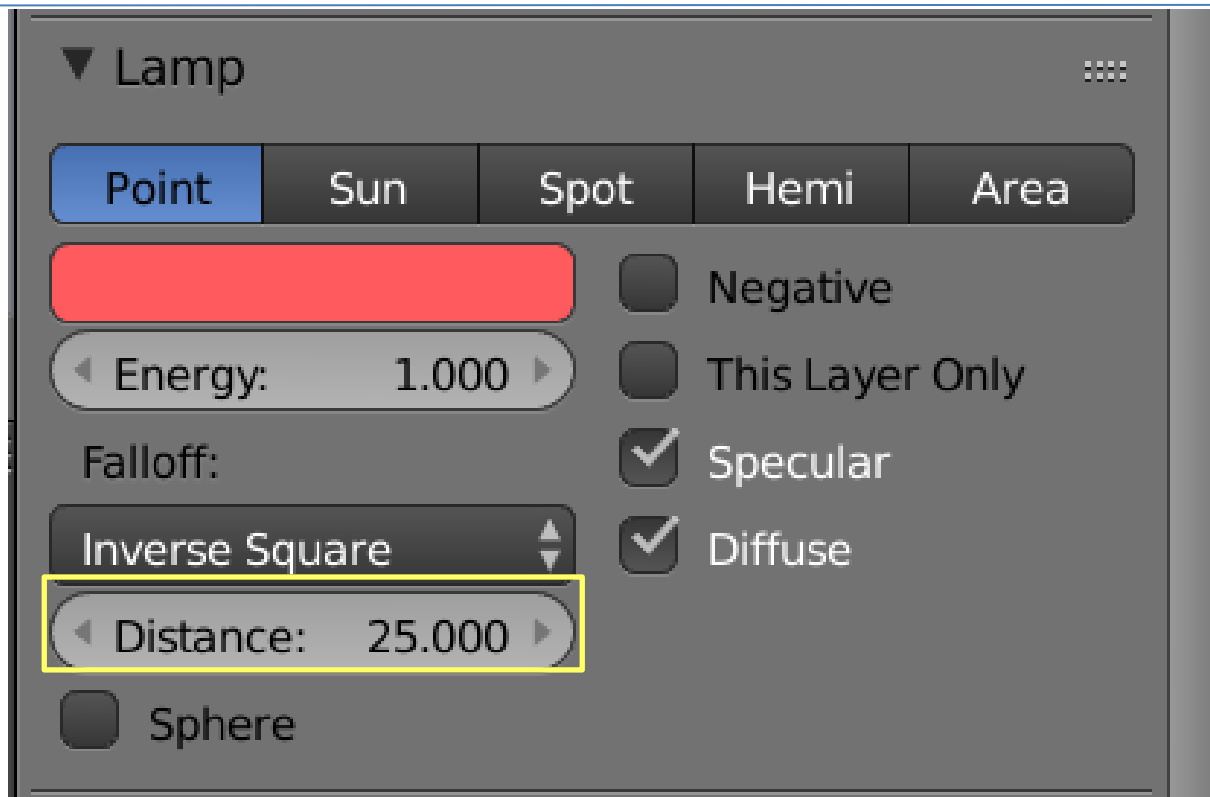


Distance

It indicates the number of Blender Units (BU) at which the intensity of the current light source will be half of its intensity.

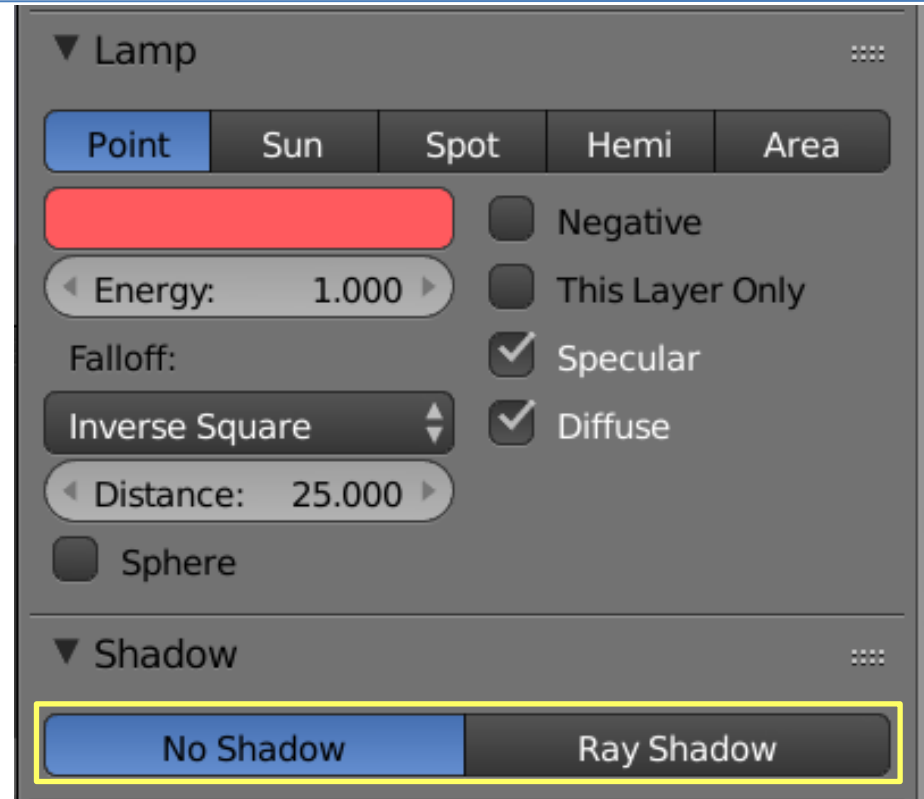
Tip:

The Sun and Hemi lamp do not have 'Distance' field as they have constant falloff.



Shadows

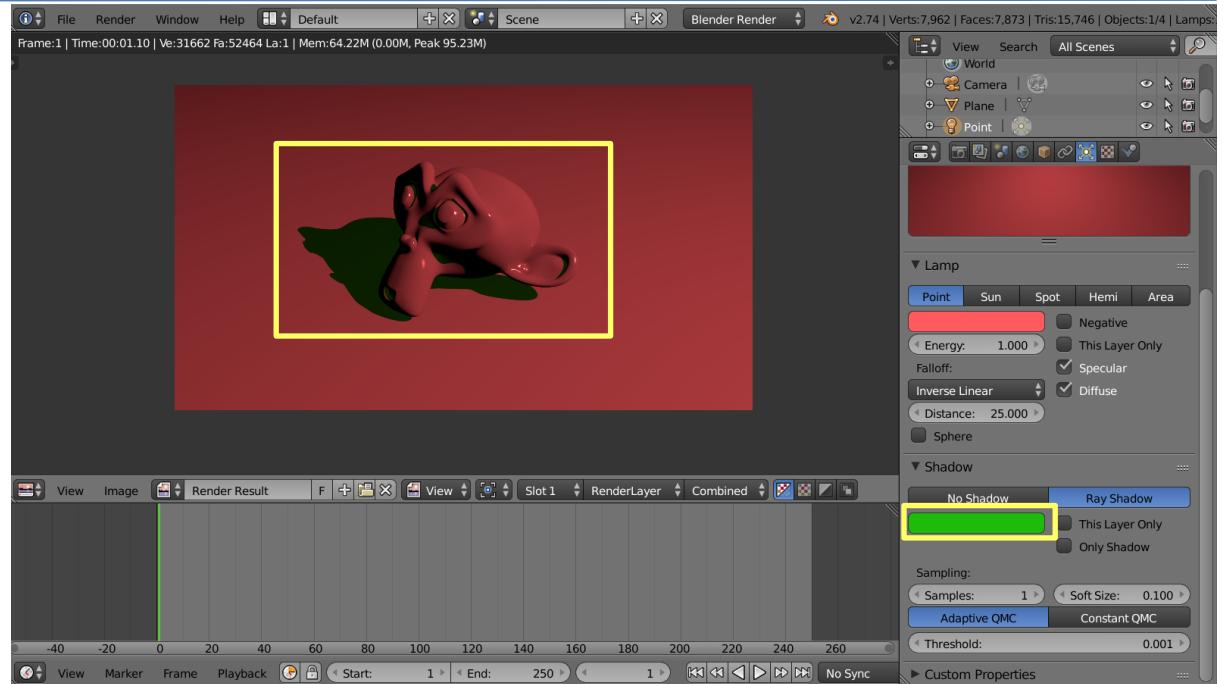
Unlike real lights, in Blender shadows created by light source can be enabled or disabled.



Shadow colour

After enabling the shadow, it gives the option to change colour of the shadow.

Similar to the colour of the light, it has a colour palette option.



3-point lighting setup

Key light, Fill light, Back light

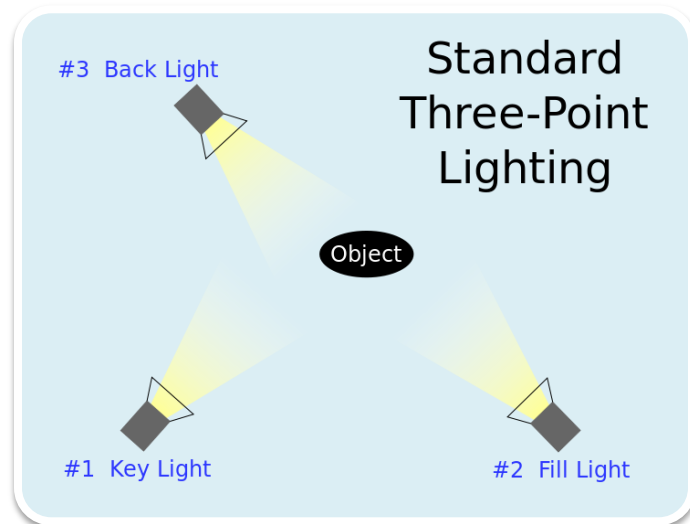
3-point lighting

It is a standard method used in visual media such as theatre, video, film, still photography and computer-generated imagery.

By using three separate positions, the photographer can illuminate the shot's subject however desired, while also controlling the shading and shadows produced by direct lighting.

Three lights used are:

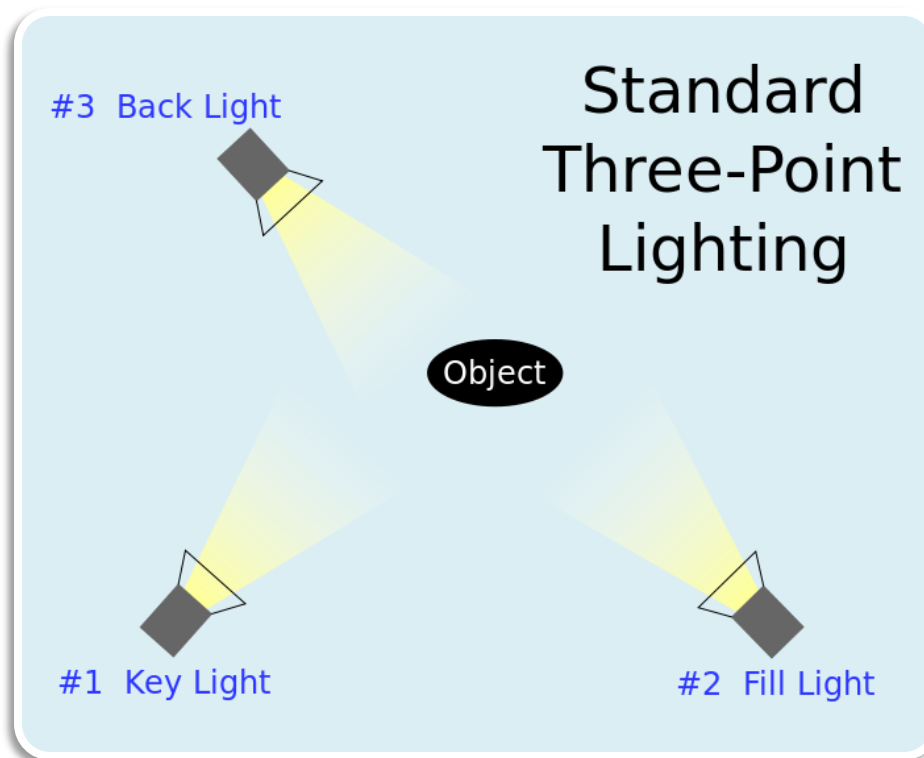
- Key light
- Fill light
- Back light



3-point lighting

- **Key light:** As the name suggests, it shines directly upon the subject and serves as its principal illuminator; more than anything else, the strength, colour and angle of the key determines the shot's overall lighting design.
- **Fill light:** It also shines on the subject, but from a side angle relative to the key and is often placed at a lower position than the key (about at the level of the subject's face).
- **Back light:** It shines on the subject from behind, often to one side or the other. It gives the subject a rim of light, serving to separate the subject from the background and highlighting contours.

Light positions



Next session

Principles of animation