

# Spot Light

This page provides information on the V-Ray Spot Light.

## Overview

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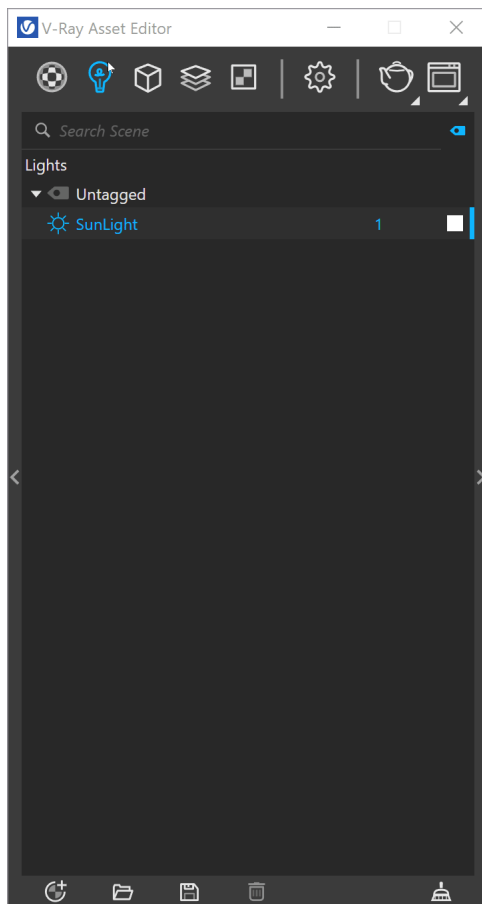
The V-Ray Spot Light is a V-Ray specific light source plugin that can be used to create physically accurate area lights. It produces a focused light, which is targeted towards an object in the scene. You can use the Cone and Penumbra Angles to strengthen the effect or make it more subtle.

## UI Paths

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||V-Ray Asset Editor|| > **Lights** (right-click) > **Spot Light**

||V-Ray Asset Editor|| > **Create Asset** (left-click) > **Lights** > **Spot Light**




||V-Ray Lights Toolbar|| > **Spot Light**



## SketchUp Menus Ribbon

||Extensions|| > **V-Ray** > **Lights** > **Spot Light**

## Parameters

**Enabled** () – Turns the V-Ray Spot Light on and off.

**Color/Texture** – Specifies the color of the light. When using photometric units, this color is normalized so that only the color hue is used, whereas the light intensity is determined by the light **Intensity**. The light uses the texture's alpha as opacity map.

**Intensity** – Specifies the strength of the light.

**Units** – Specifies the light unit of measurement. Using correct units is essential when working with the V-RayPhysicalCamera. The light automatically takes the scene units scale into consideration to produce the correct result for the scale being worked in.

**Default (Scalar)** – The color and multiplier directly determine the visible color of the light without any conversion. The light surface will appear with the given color in the final image when seen directly by the camera.

**Luminous Power (Lumens)** – Total emitted visible light power measured in lumens. The intensity of the light will not depend on its size. A typical 100W incandescent light bulb emits about 1500 lumens of light.

**Luminance (lm/m<sup>2</sup>/sr)** – Visible light surface power measured in lumens per square meter per steradian. The intensity of the light depends on its size.

**Radiant Power (W)** – Total emitted visible light power measured in watts. The intensity of the light does not depend on its size. This is not the same as the electric power consumed by a light bulb for example. A typical 100W light bulb only emits between 2 and 3 watts as visible light.

**Radiance (W/m<sup>2</sup>/sr)** – Visible light surface power measured in watts per square meter per steradian. The intensity of the light depends on its size.

**Cone Angle** – Specifies the angle of the light cone formed by the light. The value is specified in Degrees. *For more information, see the [Cone Angle example](#) below.*

**Penumbra Angle** – Specifies the angle within the light cone at which the light begins to transition from full strength to no lighting. When set to 0, there is no transition and the light produces a harsh edge. The value is specified in Degrees. *For more information, see the [Penumbra Angle example](#) below.*

**Penumbra Falloff** – Determines how the light transitions from full strength to no lighting inside the light cone.

**Linear** – The light will not have any falloff.

**Smooth Cubic** – The light will fade in a realistic way, similar to the **Inverse Square** option for **Decay**.

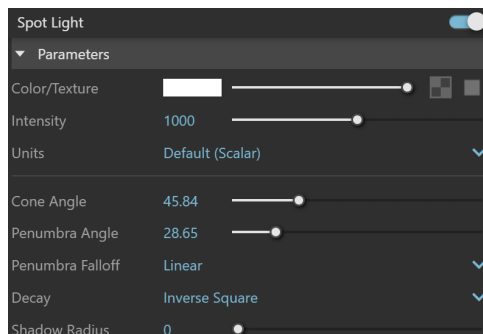
**Decay** – Sets the behavior of the light intensity from the distance of the light source. Light intensity is inversely proportional to the square of the distance from the light, meaning surfaces farther from the light are darker than surfaces closer to the light.

**Linear** – Intensity will not decay with distance.

**Inverse** – Light intensity is inversely proportional to the distance from the light.

**Inverse Square** – Light intensity is inversely proportional to the square of the distance from the light. This is the normal behavior of light.

**Shadow Radius** – Controls the size of the light. Where 0.0 is a point light, larger values produce soft (area) shadows.



## Options

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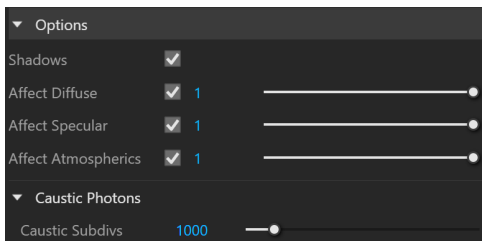
**Shadows** – When enabled (the default), the light casts shadows. When disabled, the light does not cast shadows.

**Affect Diffuse** – When enabled, the light affects the diffuse properties of the materials.

**Affect Specular** – When enabled, the light affects the specular of the materials.

**Affect Atmospherics** – Specifies whether the light influences the atmospheric effects in the scene. The value determines the amount of involvement.

**Caustic Subdivs** – Used by V-Ray when calculating Caustics. Lower values produce noisy results but will render faster. Higher values produce smoother results but take more time.



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## Example: Cone Angle

This example demonstrates how the light changes with the change of the Cone Angle. The Penumbra Angle is set to 20 for all renders, only the degrees of the Cone Angle change. Notice how lower degrees result in sharp shadows and focused light, while higher degrees make the light diffused and the shadows blurrier.



Cone Angle = 10 degrees



Cone Angle = 30 degrees



Cone Angle = 45 degrees



Cone Angle = 60 degrees



Cone Angle = 90 degrees

10  
90

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### Example: Penumbra Angle

This example demonstrates the behavior of the light when changing the Penumbra Angle. The Cone Angle is set to 20 for all renders.





Penumbra Angle = 0 degrees



Penumbra Angle = 15 degrees



Penumbra Angle = 30 degrees



Penumbra Angle = 45 degrees



Penumbra Angle = 90 degrees

0  
90

## Notes

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- Scene units in SketchUp are always calculated in inches.