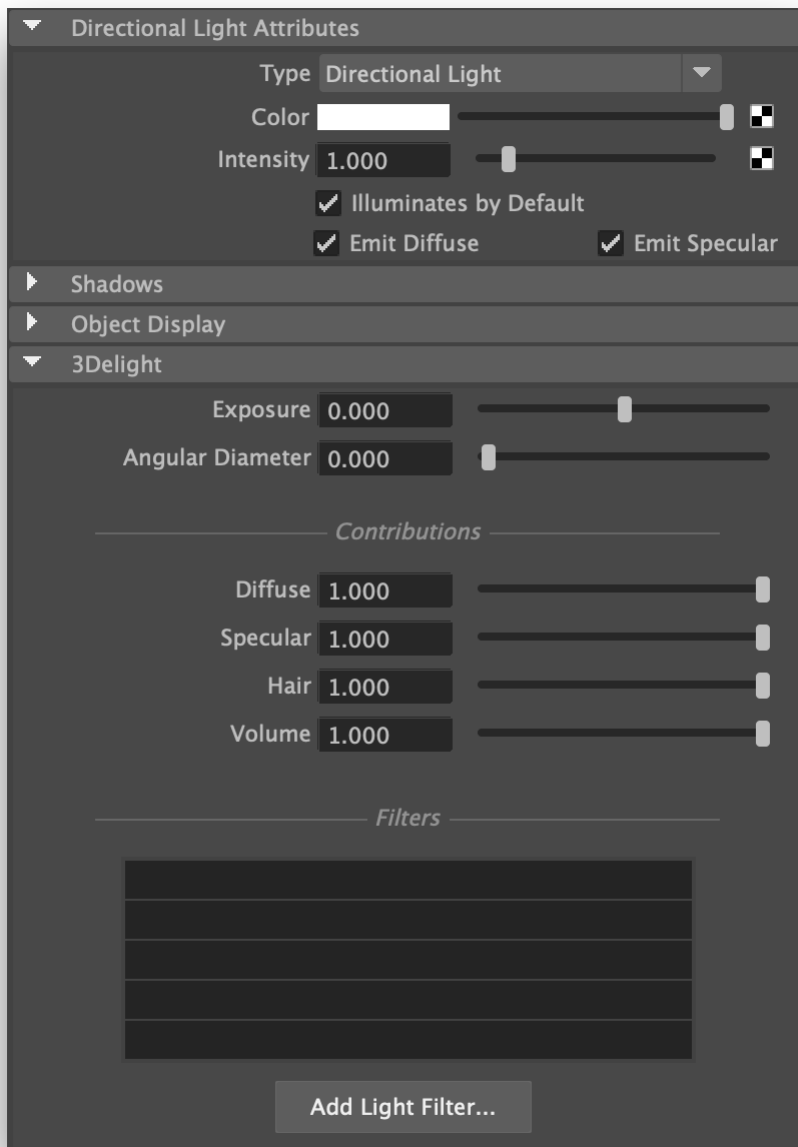


# Directional Light



*The Directional light attributes.*

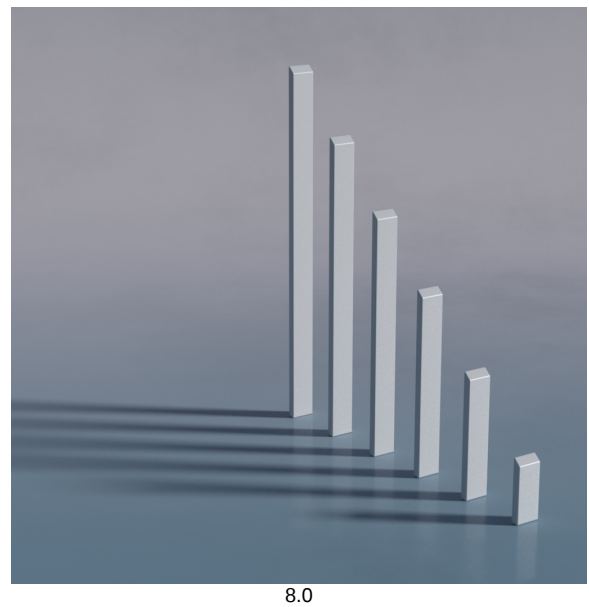
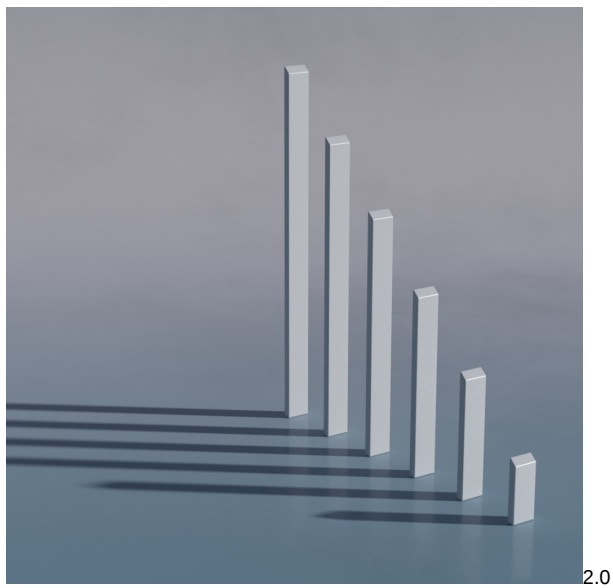
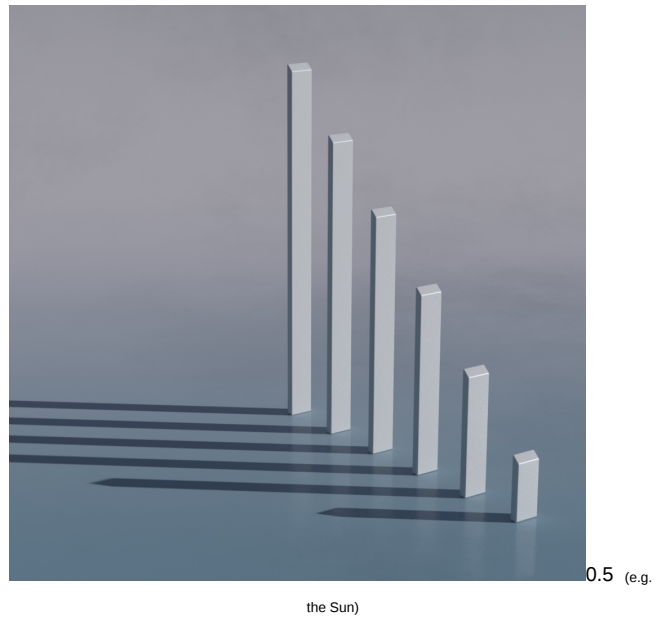
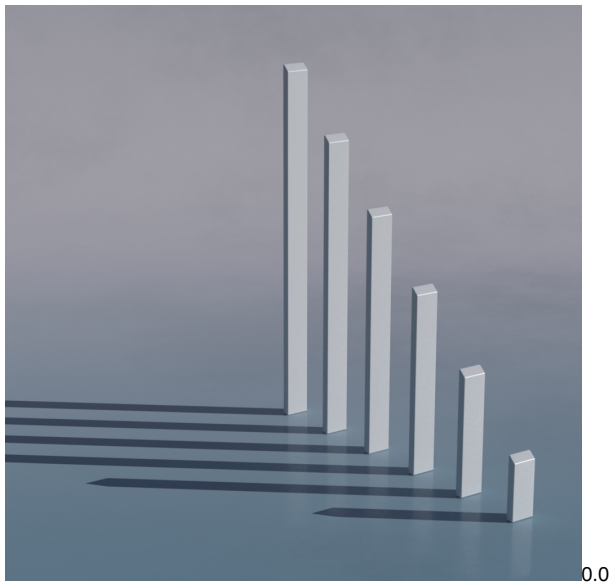
## Distant Light Controls

### *Normalize Intensity by Area*

Turning this parameter on will divide the total intensity of the distant light by its area, allowing adjustments to the angular diameter or the scale of the light without affecting the intensity.

### *Angular Diameter*

A directional light emulates a point light source that is placed at infinity. However, it is often handy to be able to specify objects that are extremely far but are not well simulated by a single point (e.g. the sun). Since it would be impractical to specify the footprint of a far away object using absolute values of distance and size, we use instead the [angular diameter](#), in degrees, spanned by an object in the sky.



Note that modifying the angular diameter will change the light intensity when *Normalize by Area* is turned off.

## Light Intensity and Color Controls

### Color

Defines the light color.

### Intensity

Species the light intensity.

### Exposure

This is an additional control over the standard light intensity. Exposure is in many cases a preferred control due to its likeness to photography. Final light intensity is thus computed by:

$$I = \text{intensity} * \text{pow}(2, \text{exposure})$$

### Decay Rate

Specify the rate at which the light intensity decreases in function of the distance to the light source. The available values are:

|          |                                                            |
|----------|------------------------------------------------------------|
| No Decay | Light intensity remains constant with respect to distance. |
|----------|------------------------------------------------------------|

|           |                                                                                                                   |
|-----------|-------------------------------------------------------------------------------------------------------------------|
| Linear    | Light intensity decreases linearly with distance.                                                                 |
| Quadratic | Light intensity decreases proportionally to the square of the distance. This is the physically correct behaviour. |
| Cubic     | Light intensity decreases proportionally to the cube of the distance.                                             |

## Fine Tuning the Light Contribution to the Shading Components

It is sometimes useful to have a fine and direct control on how the light intensity affects various shading components. The following controls allows for that:

### *Diffuse Contribution*

Specifies a multiplier for the light contribution to diffuse shading.

### *Specular Contribution*

Specifies a multiplier for the light contribution to specular shading.

### *Hair Contribution*

Specifies a multiplier for the light contribution to hair shading.

### *Volume Contribution*

Specifies a multiplier for the light contribution to volumetric effects in atmosphere and OpenVDB volumes.

## Filtering the Light

To use one of the scene's light filters on the light source, click on it in the filters list. All highlighted filters in the list will be applied on the light source.

Click *Add Light Filter...* to create a new light filter. It will be applied on the light source.