3D Lights Reference Sheets

Types of lights and Their Parameters

Parameter / Light Type	**Parallel** Like an open ended box	**Spot** Like a cone	**Point** Like a sphere; like a bare hanging light bulb	**Ambient** It's magical because it comes from no particular direction; it illuminates everything
Intensity	✻	✻	✻	✻
Colour	✻	✻	✻	✻
Cone Angle	-	✻	-	-
Cone Feather	-	✻	-	-
Falloff	✻	✻	✻	-
Radius	✻	✻	✻	-
Fall Off Distance	✻	✻	✻	-
Cast Shadows	✻	✻	✻	-
Shadow Darkness	✻	✻	✻	-
Shadow Diffusion	-	✻	✻	-
Transform - Point of Interest	✻	✻	-	-
Transform - Position	✻	✻	✻	-
Transform - Orientation/Rotation	-	✻	-	-

The Parameters

Light type - Parallel, Spot, Point, Ambient
Parallel light - a light at an infinite distance away like the sun
Spot light - like a studio light with barn doors or a lamp shade
Point light - like a light bulb hanging in space
Ambient light - no direction, no position (illuminates all things equally)
Intensity - 0% to 100% or more
- strength
Colour
- white is a good starting point
- use a pale red/orange/yellow to warm things up
- use a pale blue to cool things down
Cone Angle
- like the barn door which controls the light direction
- good starting point is 90º
- the narrow end of the cone is where the light is; the open end is where it points
- appears as a circle where it points

Cone Feather
- only affects the area inside the cone of light
- 0% is the maximum cone angle; becomes a hard circle
- increase the % to feather the light (make it more diffuse) and cut into the area of illumination
Falloff - None, Smooth, Inverse square clamped
- how rapidly the cone angle falls off
None -
Smooth-
Inverse Square clamped -
Radius
-
Falloff Distance
-
Cast Shadows On or Off
- On or Off are the only 2 options
- turn off to just illuminate the subject
- turn on if you want to illuminate the subject **and** cast shadows
Shadow Darkness - how dark/light shadows are
- 0% shadow gone - 100% shadow dark
Shadow Diffusion
- how diffuse the shadow is measured in pixels

Keyboard shortcut to reveal just the light parameters - aa (click on a twice)
Keyboard shortcut for just Point of Interest - select the light - click a

Working with Point lights

keyboard shortcut - Shift + T is Intensity

Intensity
- the strength of a light

Moving the light
- You can use the X, Y and Z axis to constrain moving the light on the X, Y and Z axis respectively
- if you want to move the light freely, position your mouse behind the light - if you don't see the x, y and z axis constraint, it can move freely

A helpful view to look at where lights are- To see how the light is positioned in relation to the other objects in a scene, - at the bottom of the **Composition** window, click on the **Active Camera** drop down and select **"Custom View 1, 2 or 3"**

Turning the light on or off
- TBA

Working with Spot Lights

General note
Cone lights are like a point lights, but with the addition of Cone Angle and Cone Feather

Isolating just the useful parameters of a light (Getting rid of rotation parameters)
For a light, Transform has the following parameters

Position, Point of Interest, Orientation, X Rotation, Y Rotation, Z Rotation

To isolate just **Position** and **Point of Interest**,

Click on the light and press **Shift R**

Notes on Position and Point of Interest
1) When you move a light freely (without constraining the x, y or z axis), the **Point of Interest** stays in one spot
2) When you constrain the light movement, for example, move the light on just the x axis by using the x "arm, the **Point of Interest** moves with it.
3) If you want to **Point of Interest** to stay where it is, press **CTRL**

Working with objects in combination with lights

General note

Objects can be affected by lights or not. It’s your choice.