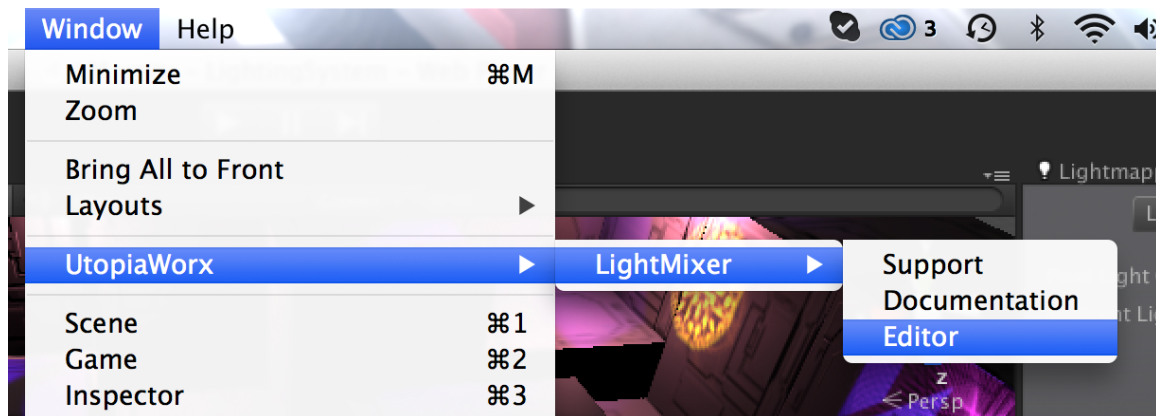# LightMixer 1.0.2
by
UtopiaWorx

Introduction:

LightMixer is the next evolution in scene lighting for Unity 3D. With LightMixer you can light up your scenes with ease by using our intuitive point and click lighting system. We have provided over 107 unique Cookies and 14 CubeMaps for you to use, as well as tools for creating special lighting effects as well as animation scripts for Rotation, Orbiting and Light Pulses. With LightMixer, you can also set most of the traditional light settings you would in Unity without ever having to leave our Editor Window.

Why is it free?

It's free because we wanted to give something back to the Unity Community. There is a wealth of fantastic free assets for Unity 3D available, and we just wanted to be part of that club. If you really really like this asset, feel free to let us know by giving us a review on the Asset Store. Also, we do have other products available for sale on the Asset Store, which you may love just as much.
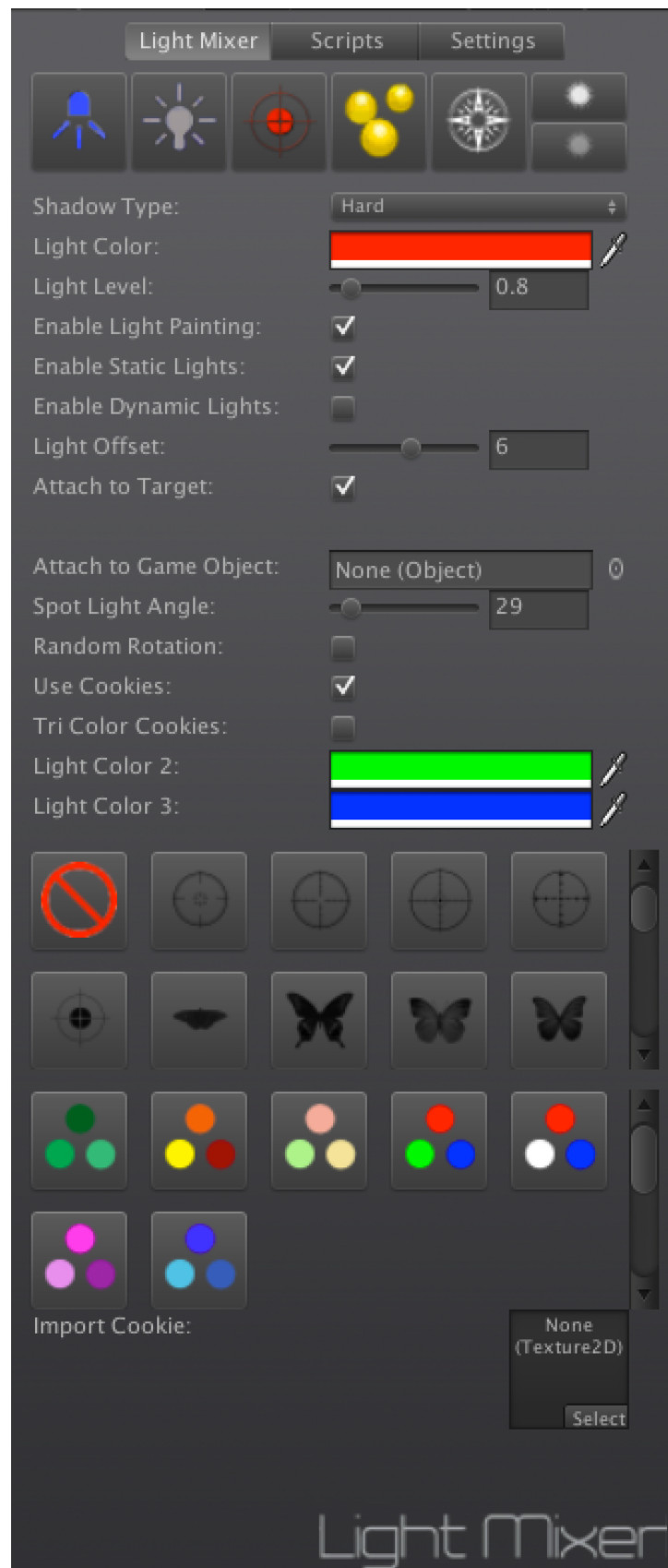
Installation:

To install LightMixer simply import the LightMixer package into your Unity Project. This will place all of the required files into the Assets folder of your project. Once installed simply click the "Window->UtopiaWorx->LightMixer->Editor" link on the Unity Menu. This will launch the LightMixer Editor Window.

Usage:

Once you have installed and launched the Editor Window you are ready to start using LightMixer. LightMixer contains 3 separate Panels, which you will use in the process of lighting your Scene. The first panel is the "LightMixer" panel. This panel contains the main tools that you will use to create lighting in your scene. While most of the buttons should be self explanatory, we will go over what each setting does.

Shadow Type: Hard   ⇕
Light Color:
Light Level: ○————————   0.8
Enable Light Painting: ☑
Enable Static Lights: ☑
Enable Dynamic Lights: ☐
Light Offset: ——————○——   6
Attach to Target: ☑

Attach to Game Object: None (Object)   0
Spot Light Angle: ○————————   29
Random Rotation: ☐
Use Cookies: ☑
Tri Color Cookies: ☐
Light Color 2:
Light Color 3:

Import Cookie: None
                                                (Texture2D)

                                                        Select

Light Mixer

Lighting Types:
The first 2 buttons you will see are used to select the lighting type which you would like to use for the scene, You can switch between both Spotlight and Point Light at any time, however you will notice that different options will appear based on your selection. For Example If you select the Spotlight button, you will able to use 2D Texture Cookies, however if you select Point Lights, you will have the option to chose CubeMap based cookies. In almost all cases the lights you create with LightMixer will be created as Static Unity objects, so they can be baked into a LightMap. The exception to this rule happens when you select scripting options from the "Scripts" tab, as these options cause your lights to act in a dynamic nature.

Retarget Button:
The Retarget button is used to make modifications to lights you have already created. Once you have created a light in your scene, select your light in the scene by clicking on it and then click the Retarget button. This will cause the light you selected in the scene to become the active target for edit. Once in Edit Mode you can change properties like, Light Color, Angle, Cookie etc… To exit Edit mode, simply press the Return/Enter key on your keyboard.

Light Probe Network Button: (Unity Pro Only)
This button will automatically create a Light Probe network on your scene for you. It will use a technique involving sphere casting to determine where light probes need to be placed. It will also set the volume density based on the options in the Setting Panel.

Bake Lightmap:
You can actually use LightMixer to bake your Light Maps instead of using the LightMaapping window in Unity. On the Settings panel, you will find options to set the resolution of the Lightmap settings.

Nudge Buttons:
The nudge buttons are very useful for situations when you want to make small changes to the intensity of a selected group of lights.

Shadow Type:
Once you change this selection, LightMixer will create each subsequent light with the selected Shadow settings.

Light Color:
This is the color that your lights will be created with. You can click on the eyedropper icon to launch the Unity color picker utility and select your color.

Light Level:
This option will set how bright the lights you are creating should be. This option directly maps to the Intensity setting of a Unity Light.

Enable Light Painting:
By ticking this checkbox, you are enabling the Light Painting mode. Once this mode is turned on, any vertex you click in your scene will become lit with the selected light type. You can still rotate and zoom your scene in Unity by using your key and click combinations without causing lights to be created. Remember to turn this option off when you have finished painting your lights.

Enable Static Lights:
This option is useful for when you are ready to bake out your light maps. Once your light map is baked, you can simply uncheck this option to remove them from the scene.

Enable Dynamic Lights:
This option is useful for when you are ready to bake out your light maps. Ideally you will not want to bake your light maps with the dynamic lights enabled, as doing so will cause lighting artifacts to be left on the light maps. Simply re-enable this option once you are ready to publish or test your game.

Light Offset:
This option specifies how far off of the selected vertex the light should be placed.

Attach to Target:
This will cause any light created to become a child of the clicked object. This is useful for creating a managed scene hierarchy where you want each object to contain its own lights. Should you move the object, the lights will follow it. If you leave this option unchecked and have no objects specified in the "Attach To Game Object" picker, the light will become its own node in the hierarchy.

Attach to Game Object:
This option will cause your newly created lights to attach to a specified GameObject. This is useful for creating a managed scene hierarchy where you want global object to contain all lights.

Spot Light Angle:
This setting will cause the angle width of a spotlight to widen or narrow.

Random Rotation:
This option is useful in creating lights, which contain Cookies to be placed on the selected vertex surface with a random rotation. This will help your scene look more organic and repetitive.

Use Cookies:
This option will display some additional settings you can use to create even more detailed lighting.

Tri Color Cookies:
This option will cause your lights to be created in sets of 3 all of each slightly offset in their "Z" Axis, thus creating a feel of depth. This feature will use the color setting specified in the Light Color 2 and Light Color 3 settings.

Light Color 2:
When Tri Color Lighting is enabled, this will be the color of the 2nd light.

Light Color 3:
When Tri Color Lighting is enabled, this will be the color of the 3rd light.

Cookies:
We have shipped a library over 60 total Cookies and CubeMaps. You simply click on the cookie you wish to project, and LightMixer will attach that Cookie to your lights.

Color Schemes:
We have provided a few starter color schemes you can use to create beautiful lighting effects. Simple click on the color scheme you want to use, and LightMixer will assign those colors to the Color Pickers.

Import Cookies:
You can use this tool to convert any imported texture to RGB channels and create a light set which will project a full color copy of your texture.

Scripts Panel:
The scripts panel contains some scripting options you can use in your lights, which will cause very interesting lighting effects. It should be noted that any light created with a script attached, would cause those lights to be created as non-static, thus unusable in Light Mapping.
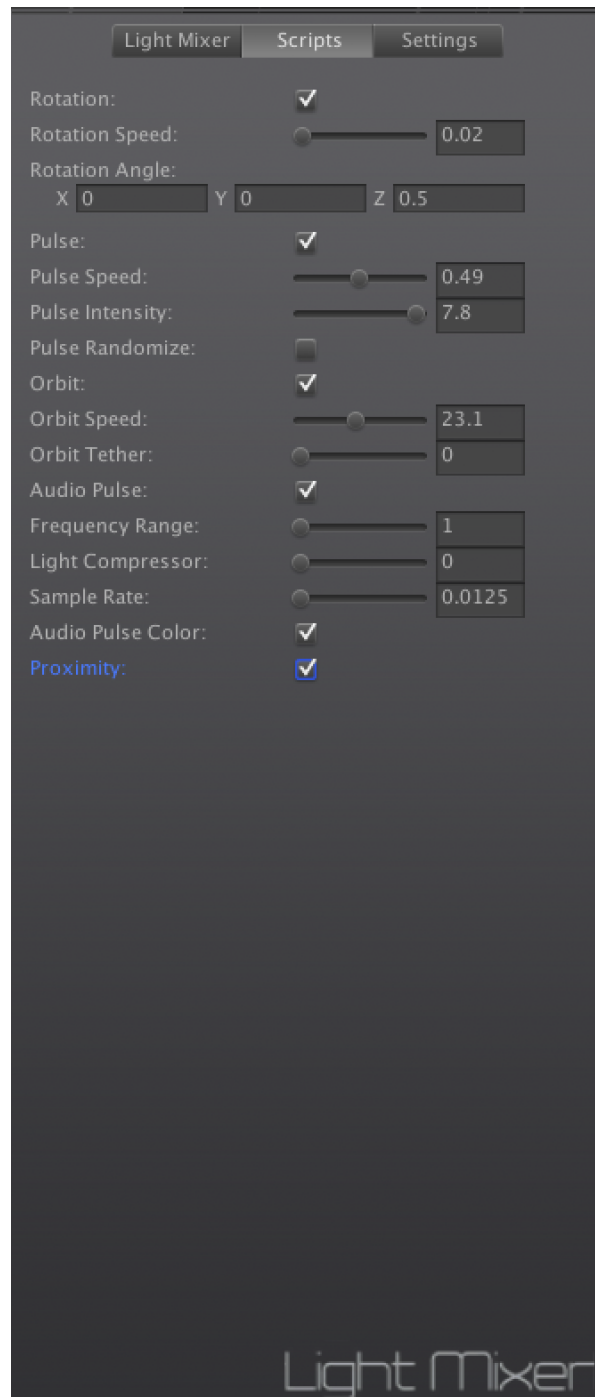
Rotation Script:
This script cause your light to rotate around its own local pivot point, in whatever vector you specify in the Rotation Angle X, Y and Z values. You can also specify how fast you want the light to rotate, where 0 is fastest and 1 is slowest.

Pulse Script:
This script will cause your light to pulsate between 0 and the maximum intensity specified at the speed specified.

Orbit Script:
Similar to the Rotation Script, the Orbit script will cause your light to rotate around a given point, with the exception that the light will orbit around whatever object it is attached to as if it were tethered to it.

Audio Pulse Script:
This script will sync the created light with the Spectrum data coming off of the Default Audio Listener for a given scene. You can modify the Range to set if it should respond to Bass, Mids or Treble. Light Compression will place a hard limit on how bright your light can ever be. Sample Rate tells the engine how frequently to resample the Audio stream, lower values will cause the lights to respond faster, but will also incur a performance hit.

Audio Pulse Color:
This script will make small color variations to your light based on the overall averaged volume sampled at the default Audio Listener for the given scene.

Proximity:
This script will cause lights to brighten and dim based the proximity of any GameObject containing the "Player" Tag.

Notes:
LightMixer will not be able to connect lights to a selected vertex when either of the following conditions is met:
1) *You attempt to attach a light to a mesh that does not contain a mesh collider of some sort. LightMixer uses a Physics.RayCast() to determine the correct vertex and if the mesh in question does not have a collider, the ray cast will not collide with it. If your mesh does not require a collider, you can disable it after you are finished lighting your scene.*
2) *You attempt to attach a light to a Terrain object. Terrain objects do contain collider information, but do not contain normal.*

Settings Panel:
This panel contains some general setting for your scene, which will help prepare your scene for Complex Lighting.
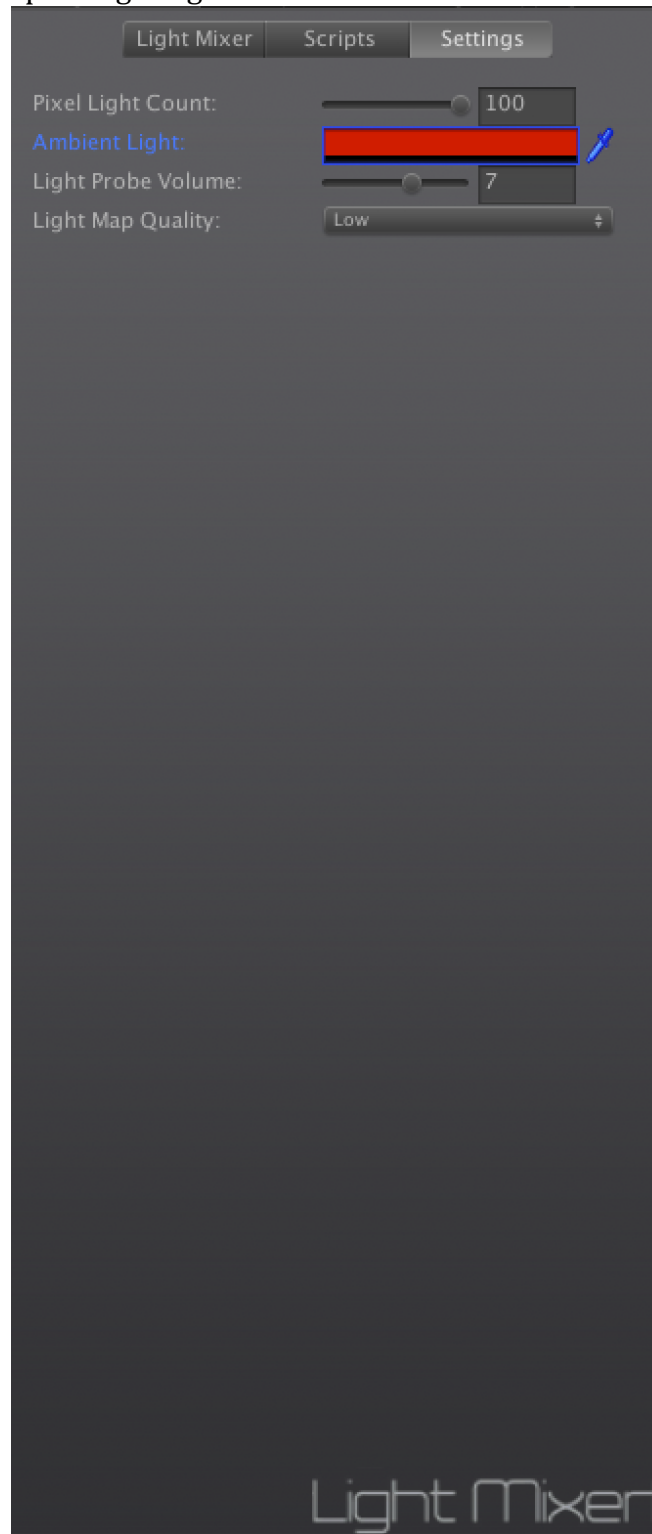
Pixel Light Count:
Depending on the rendering path you have setup for your Project, you may need to adjust this setting to make sure that your objects can render enough light objects. Typically you can use this option before you bake your light map, and then disable it once you have baked a light map.

Ambient Light:
This option will adjust the overall ambient light of your scene, which can be useful for getting a true sense of how well your lighting is setup. We recommend that you set your Ambient color to black when making changes to your lights and then set it back to whatever color you like once you bake your light map.

Light Probe Volume: (Unity Pro Only)
This option will specify the density of the Light Probe Network you can create with the Auto Light Probe tool. Setting it to a value of 2 will cause a very tight network, whereas a volume of 10 will create a very loose network.

Light Map Quality:
This setting will let you chose the overall quality settings to be used in baking a light map. You can use Low to render a quick preview of your scene and see what things you need to tweak in order to get things finalized just right.

Edit Mode:
Once you have painted a light onto your scene it is immediately available to make changes to in Edit Mode. In Edit mode, you can adjust some basic properties of your light such as Color, Intensity, Range, Angle, Cookie and Shadow Type. To exit from Edit mode, simply press the Enter/Return key on your keyboard.

Typical Workflow:
We have found the following workflow to be the best approach for using LightMixer.
1) Setup your Scene Geometry and Texturing
2) Go to the settings tab and set the ambient light to black
3) Use the Point Lights to create your general mood colors for the areas of your map.
4) Begin to decorate your scene with other various spotlights
5) Create your Light Probe Network (Unity Pro Only)
6) Enable all Static Lights
7) Disable Dynamic Lights
8) Bake your Light Map at a low quality
9) Disable all static Lights

10) Enable all Dynamic Lights
11) Setup a low power Directional Light (to pickup specular details)
12) Test your scene.
13) Repeat steps 6-12 until you are happy with the results, slowly adjusting the lightmap quality until you are happy.

Thank You for using LightMixer,
Please be sure to rate the tool on the Asset Store!
Check out our other products while you are there!