



# USER MANUAL REDLIGHTS 2.0

## ILLUMINATE THE PLANET!

DÜSSELDORF, 17. FEBRUARY 2015

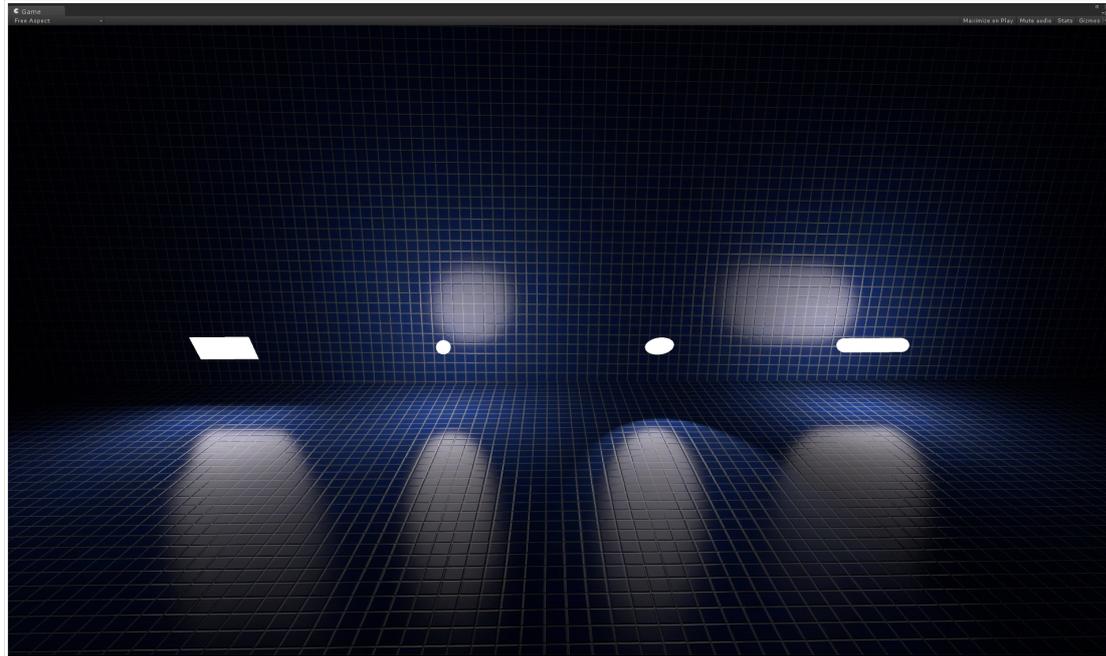
### INTRODUCTION

The redLights 2.0 package is the definitive lighting solution for real-time area lights in Unity3D.

COMPATIBLE WITH UNITY 5.X PRO

### SUPPORTED EMITTER TYPES

- Rectangular Emitter
- Spherical Emitter
- Disk Emitter
- Tube Emitter



## OTHER FEATURES:

- Supports the new *Physically Based Standard Shader*
- Deep editor integration
- *IES light profile* integration
- Works in *Forward & Deferred* Shading rendering path
- Works on *Windows / Mac*

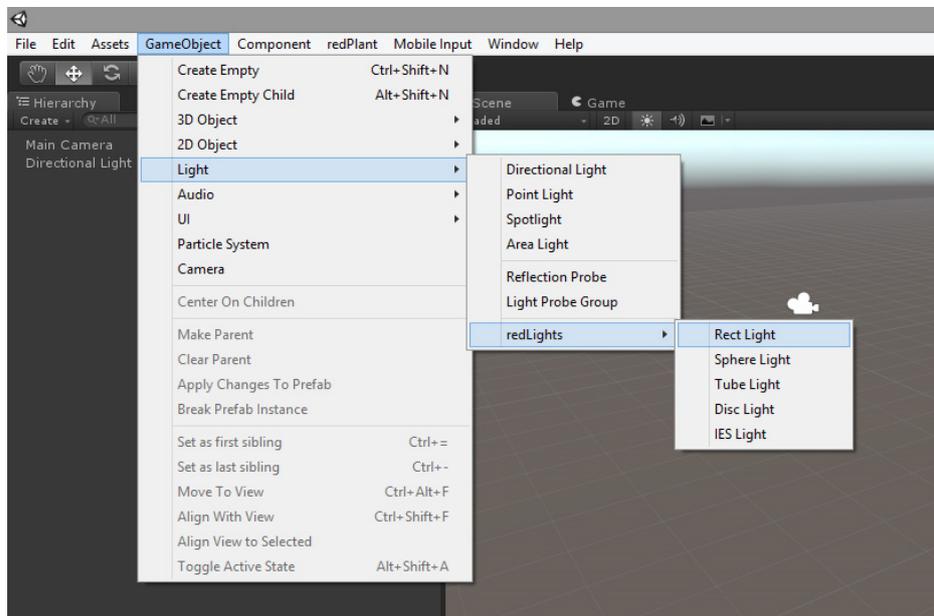
## GETTING STARTED

- 1. AFTER YOU HAVE IMPORTED THE REDLIGHTS 2.0 PACKAGE, ASSIGN OUR CUSTOM DEFERRED SHADER IN THE GRAPHICSSETTINGS. THIS STEP MAY OR MAY NOT BE NECESSARY**
  - Goto » Edit / Project Settings / Graphics
  - In the Built-in shader settings choose Custom shader
  - Assign *redPlant-DeferredShading*
- 2. SWITCH TO LINEAR COLOR SPACE**
  - Goto » Edit / Project Settings / Player
  - Select Color Space Linear
- 3. OPEN ONE OF THE EXAMPLE SCENES. CURRENTLY THERE ARE 7 SCENES TO CHOSE FROM**
  - *disk\_sizes.unity* - Demonstrates the *Disk Emitter*
  - *rect\_sizes.unity* - Demonstrates the *Rect Emitter*
  - *sphere\_sizes.unity* - Demonstrates the *Sphere Emitter*
  - *tube\_sizes.unity* - Demonstrates the *Tube Emitter*
  - *profiles\_sizes.unity* - Demonstrates the *IES Emitter*
  - *light\_types.unity* - Demonstrates the *different emitter* in combination with the *stock lights*
  - *performance.unity* - *Stress test*. Rendering 12 instances of each emitter at once. Total 48 lights

## CREATING REDLIGHT INSTANCES IN YOUR SCENE

### CREATING REDLIGHTS

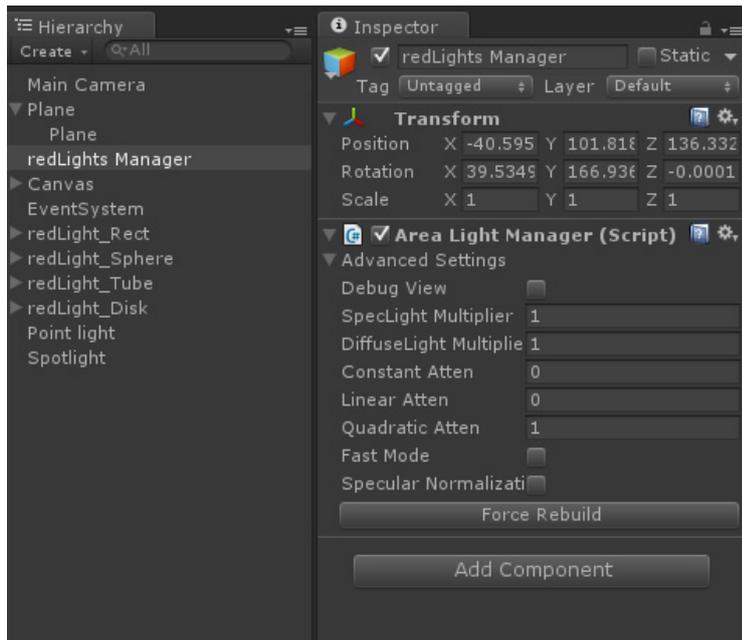
- Make sure, that your models use the *new standard shader* (regular or specular setup)
- Goto » GameObject / Light / redLights
- Choose one of the five available *emitter types* (Rect, Disk, Sphere, Tube, IES)



## REDLIGHT MANAGER

Creating a light instance will also construct a *redLight Manager object* in your scene hierarchy, which is needed for updating and rendering the lights.

This component has an advanced tab with the following settings:



### SPECLIGHT MULTIPLIER AND DIFFUSELIGHT MULTIPLIER

These can be used to amplify / attenuate the specular & diffuse lighting respectively. These are only debug values and should only be manipulated if absolutely necessary.

### CONSTANT ATTEN, LINEAR ATTEN AND QUADRATIC ATTEN

This settings control the light attenuation curve. Default is a basic  $(1/d^2)$  falloff curve.

### FAST MODE

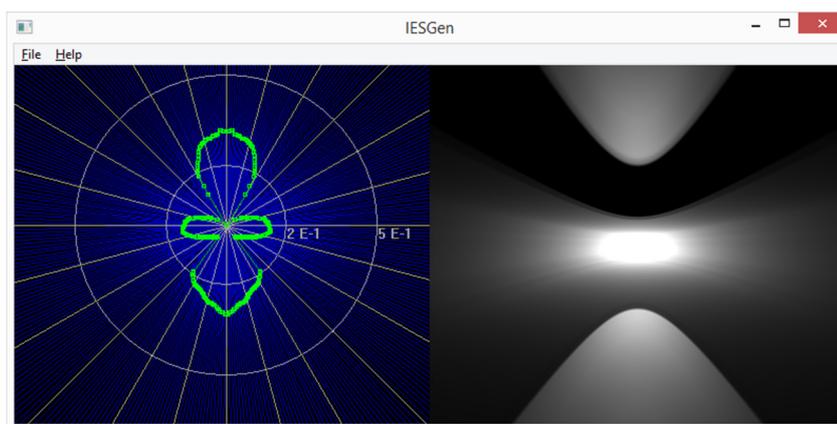
Switches between two different functions for evaluating light direction for the lighting term. One is more expensive and more precise, while the other is cheaper and may generate some rendering artifacts

### SPECULAR NORMALIZATION

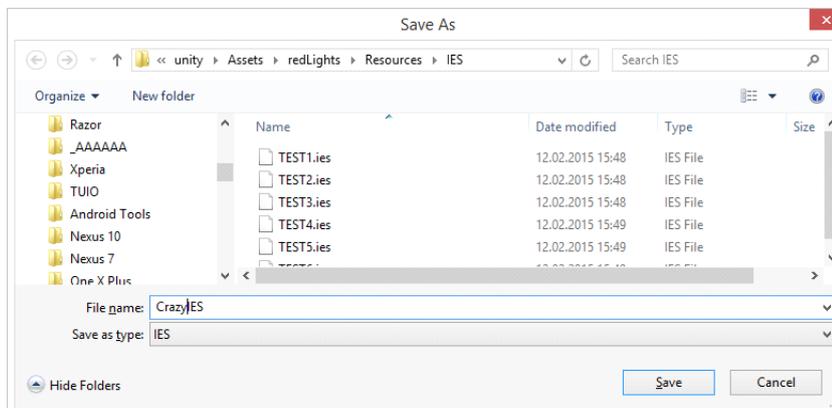
Experimental "tonemapping" parameter for specular power

## IES WORKFLOW

- Creating custom IES profiles with *iesgen*
- The redLights 2.0 package supports *basic IES profiles* for point emitter. We support input data, which has been exported by the *IESGen 4 tool*. It can be downloaded under:
  - [http://rip3d.net/Downloadmodels/iesgen\\_4.rar](http://rip3d.net/Downloadmodels/iesgen_4.rar)
    - Open IESGen
    - Paint an appropriate IES profile for your scenario



- Save the profile to the following directory "redLights/Resources/IES"

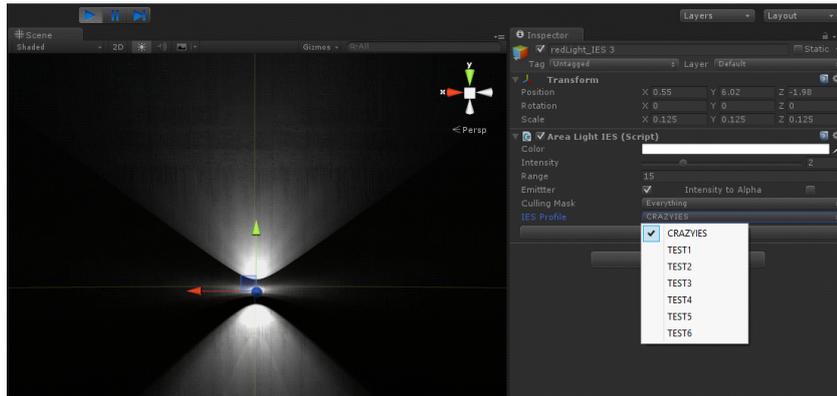


- The new profile will be imported and added to our IES lut automatically
- Select the profile from the respective editor drop down

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**REDPLANT**  
REALTIME STUDIOS



- o Enjoy!

## ROADMAP

- Mobile support. Mobile export is already working, however we still need to do some performance tuning, before we support it officially. Furthermore, in the current version here is a bug, which causes certain rendering glitches in mobile spec highlights.
- Support for textured emitter (Rects & Spheres). We have a working version for this, but we need to eliminate a couple of minor rendering glitches, before we support it officially.
- Indie support. Actually this is done already, however at the time of writing we didn't have access to a 5.0 indie version and therefore couldn't test redLights on the free version.

## KNOWN ISSUES

- We implemented fallback support for the *4.x legacy shader*. However, occasionally we experienced some problems in forward rendering with our redLights and the legacy shaders. We are currently investigating the cause for this.
- Unity will assume that the first Directional Light that it finds in the scene is the main sun and therefore will sync it with the Skybox in the Lighting settings. If you experience that the redLights influence your Skybox do the following:
  - Assign a dummy Directional Light with zero intensity as Sunlight
  - Create new Directional Light. Set its intensity to 0
  - Goto » Window / Lighting / Scene and assign it to the Sunlight slot

