



# Graphic Power-Up

v1.1

What's included:

- Advanced Surface Shaders (Like mental ray / V-Ray)
- New Post-Processing (HDR, Adaptive exposure, Bloom, etc.)
- Cubemap Controller (Real-time HDR-Reflections)
- 3 Demo-Scenes

# Advanced Surface Shaders

- It's family of shaders, very customized, flexible
- Can look like Mental Ray, V-Ray materials

## Materials properties :

- **Main Color:**  
RGB-channels is main color of material and multiply for diffuse texture.  
Alpha-channel is opacity and multiply for alpha-channel in diffuse texture.
- **Base (RGB) Alpha (A):**  
Base (RGB) is diffuse texture.  
Alpha(A) is opacity in alpha-channel in diffuse texture.
- **Reflection Color:**  
RGB-channels is reflection color and used for intensity of reflections.
- **Glossiness:**  
The level of blur for highlights and reflections.
- **Fresnel Power:**  
The level of falloff highlights and reflections.
- **Fresnel Bias:**  
Bias for falloff of highlights and reflections.
- **Normalmap:**  
Texture used for normal-mapping.
- **Bump Amount:**  
The level of bump(normal-mapping).
- **Illumination Color:**  
RGB-channels is illumination color.
- **Illumination Amount:**  
Amount of illumination.
- **Reflect(R) Glossiness(G) Illumination(A):**  
R-channel of texture used for mask of highlights and reflections (multiply to  
Reflection Color).  
G-channel of texture used for mask of glossiness (multiply to Glossiness value).  
A-channel of texture used for mask of illumination.
- **Reflection Cubemap (RGBM):**  
Reflection cubemap encoded to RGBM-range.
- **Blurred Reflection Cubemap (RGBM):**  
Blurred Reflection cubemap encoded to RGBM-range.

## Car Paint properties :

- **Color:**  
RGB-channels is main color of car paint.
- **Color (Chameleon Paint):**  
RGB-channels is back color of chameleon paint.
- **Paint:**  
**Red** color – Gloss paint,  
**Green** color – Metallic paint,  
**Blue** color – Matte paint,  
**Yellow** color – Chameleon paint,
- **Flakes:**  
Texture used for simulate metal flakes in metallic and chameleon paint.
- **Metallic Falloff:**  
The level of falloff color in metallic paint.
- **Chameleon Falloff:**  
The level of fade from main color to back color in chameleon paint.
- **Fresnel Power:**  
The level of falloff highlights and reflections.
- **Fresnel Bias:**  
Bias for falloff of highlights and reflections.
- **Blur Reflection Intensity:**  
The intensity of blurred reflections and highlights.
- **Reflection Cubemap (RGBM):**  
Reflection cubemap encoded to RGBM-range.
- **Blurred Reflection Cubemap (RGBM):**  
Blurred Reflection cubemap encoded to RGBM-range.

# New Post-Processing

Attention! Correct work only with Linear-lighting!

- Adaptive Exposure
- HDR
- Bloom
- Image Controls
- Filmic Tonemapper

## Post-Processing properties:

- **Key Value:**  
Value of middle gray, used for additionally control of exposure.
- **Adaptation Speed Value:**  
Adaptation speed to current luminance of image.
- **Gamma Value:**  
Gamma control of image.
- **Offset Value:**  
Offset used for additional dark/bright areas of image.
- **Bloom Scale:**  
The intensity of bloom.
- **Bloom Size:**  
The blurring size of bloom.
- **Bloom Threshold:**  
This value is controlling threshold for bright areas of image.

# Cubemap Controller

- Real-time Reflections
- Blurred Reflections
- HDR (encoded to RGBM)

## How to use:

Create a special layer for object with Cubemap Controller. Always exclude this layer in Culling Masks in Cubemap Controller and all cameras in scene.

Cubemap Controller generate usual cubemap (`_Cube` variable in shaders), HDR-cubemap (`_CubeHDR` variable in shaders), HDR-blurred cubemap (`_CubeBlurHDR` variable in shaders),

## Cubemap Controller properties :

- **Stop Update:**  
Boolean value to stop update reflections.
- **Cubemap Size:**  
Resolution of cubemaps.
- **Refresh Rate:**  
How fast it must be updated (Slow – 1 side per update, Medium – 2, Fast, 4, VeryFast - 6)
- **Far Clip:**  
Far clip plane.
- **Near Clip:**  
Near clip plane.
- **Rendering Path:**  
VertexLit, Forward or DeferredLighting.
- **Color Space:**  
Set color space what chosen in Player Settings (Gamma or Linear).
- **Culling Mask:**  
Include or exclude layers of objects to be rendered by cubemap-camera.
- **Shadowed:**  
Bottom fake-shadow for more realistic look on glossy materials.

# Demo-Scenes

- Exterior
- Studio
- Uniballs

## Exterior:

This scene demonstrates using of package features in exterior. Here uses a single light source (Direction Light for sun) and basic ambient lighting.

One of the features is HDR Skybox. This is a special shader (Graphic Power-Up/Skybox (RGBM)). You must prepare all sides of skybox in \*.exr image-format. In Unity-editor mark as Lightmap texture and put into material of skybox.

## Studio

In this demo shows full real-time HDR-reflections and illuminations. You can see how work illuminations and how it affects in reflections.

## Uniballs

This shows which materials can be achieved with different shaders. Designed like in offline-renderers.