

Chapter7 Lighting and Rendering	2
7.1 Lighting in Workspace (DX9)	2
7.1.1 Real-time Light Types.....	3
7.1.5 Real-time Post Processing.....	20
7.1.7 Real-time Render To File.....	25

Chapter7 Lighting and Rendering

7.1 Lighting in Workspace (DX9)



7.1.1 Real-time Light Types

The new color pickers have interactive update, so the color of the light in the scene changes as the picker is manipulated.



Ambient light

Ambient light provides equal lighting conditions for every pixel of the scene.



- **Color** – Controls the color (and intensity) of the light.



Unofficial Update Ambient Light

Intensity – top scrubber range 1.0 and up, bottom scrubber range 0.0 to 1.0

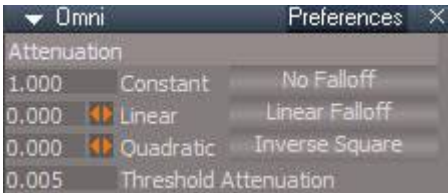
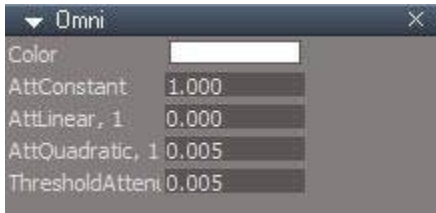
Synchronize –

Set Vray GI Color –

Quick Color Picker (HSL) – Hue horizontal, saturation vertical, luminance slider



Omnidirectional light



Unofficial Update Omni Light

No Falloff – preset Linear=0, Quadratic=0

Linear Falloff – preset Linear=0.05, Quadratic=0

Inverse Square – preset Linear=0, Quadratic=0.05

The presets have no effect on the Constant attenuation value. Mathematically it should have a value that is not zero when Linear and Quadratic are both zero.

Intensity – top scrubber range 1.0 and up, bottom scrubber range 0.0 to 1.0

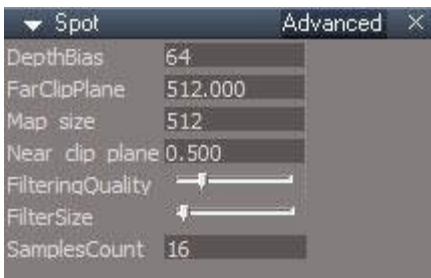
Preferences –

Synchronize –

Quick Color Picker (HSL) – Hue horizontal, saturation vertical, luminance slider



Spotlight



Unofficial Update Spot Light

No Falloff – preset Linear=0, Quadratic=0

Linear Falloff – preset Linear=0.05, Quadratic=0

Inverse Square – preset Linear=0, Quadratic=0.05

The presets have no effect on the Constant attenuation value. Mathematically it should have a value that is not zero when Linear and Quadratic are both zero.

Intensity – top scrubber range 1.0 and up, bottom scrubber range 0.0 to 1.0

Reset Rotation –

Preferences –

Synchronize –

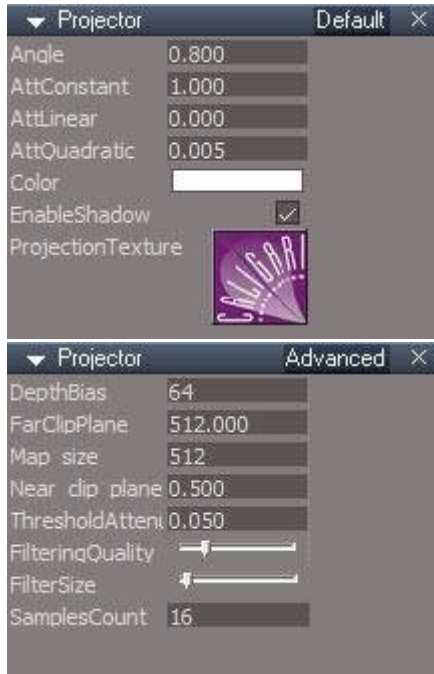
IES –

View –

Quick Color Picker (HSL) – Hue horizontal, saturation vertical, luminance slider



Projector light



No Falloff – preset Linear=0, Quadratic=0

Linear Falloff – preset Linear=0.05, Quadratic=0

Inverse Square – preset Linear=0, Quadratic=0.05

Intensity – top scrubber range 1.0 and up, bottom scrubber range 0.0 to 1.0

The presets have no effect on the Constant attenuation value. Mathematically it should have a value that is not zero when Linear and Quadratic are both zero.

Reset Rotation –

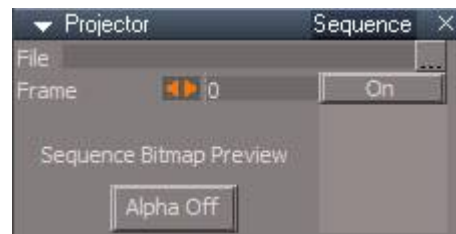
Preferences –

Synchronize –

IES –

View –

Quick Color Picker (HSL) – Hue horizontal, saturation vertical, luminance slider



Unofficial Update Projector Light

File –

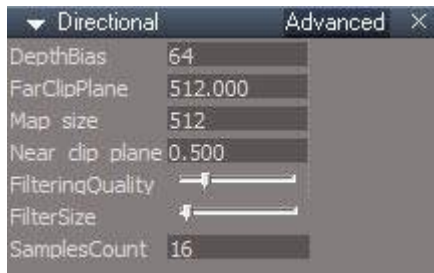
Frame –

On –

Alpha Off –



Directional light



Unofficial Update Directional Light

No Falloff – preset Linear=0, Quadratic=0

Linear Falloff – preset Linear=0.05, Quadratic=0

Inverse Square – preset Linear=0, Quadratic=0.05

Intensity – top scrubber range 1.0 and up, bottom scrubber range 0.0 to 1.0

The presets have no effect on the Constant attenuation value. Mathematically it should have a value that is not zero when Linear and Quadratic are both zero.

Preferences –

Synchronize –

Light Beam Radius – renamed from “Size”

Quick Color Picker (HSL) – Hue horizontal, saturation vertical, luminance slider



Infinite light



Unofficial Update Infinite Light

Intensity – top scrubber range 1.0 and up, bottom scrubber range 0.0 to 1.0

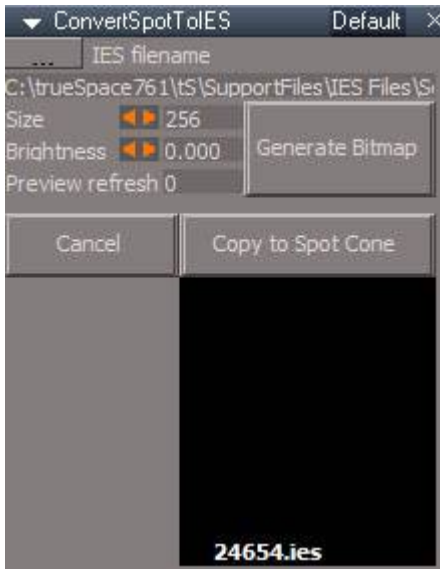
Synchronize –

Quick Color Picker (HSL) – Hue horizontal, saturation vertical, luminance slider



IES Profile / Spot Cone

Alter spot and projector lights in workspace to give the appearance of a light defined by an IES file.
RMB set general falloff for default spotlights so the hotspot angle will have an effect in the 3D viewport.



Set Angle – TODO writeup
Set Near Clip Plane – TODO writeup

Select a spotlight or projector light in the scene
Push the button to open the script panel
Push the "..." button to choose an IES file
Set value for the **Size** of the square image
Brightness increase the brightness of the image (1 = twice as bright)
Press the **Generate Bitmap** button to create the mask image
Press **Copy to Spot Cone** to apply the profile to the selected spotlight



Indigo compatible IES generator panel

The Indigo panel will generate the IES profile and add an IES data node to the light that is read by the Indigo renderer.

Size -

Falloff Exponent – control how quickly the brightness changes between the cone angle and the hotspot

Generate Spot Cone Falloff – create and apply to the selected light



Sky



Intensity – top scrubber range 1.0 and up, bottom scrubber range 0.0 to 1.0

Synchronize –

Quick Color Picker (HSL) – Hue horizontal, saturation vertical, luminance slider



Area



Intensity – top scrubber range 1.0 and up, bottom scrubber range 0.0 to 1.0

Preferences –

Synchronize –

Quick Color Picker (HSL) – Hue horizontal, saturation vertical, luminance slider

No Falloff – preset Linear=0, Quadratic=0

Linear Falloff – preset Linear=0.05, Quadratic=0

Inverse Square – preset Linear=0, Quadratic=0.05

The presets have no effect on the Constant attenuation value. Mathematically it should have a value that is not zero when Linear and Quadratic are both zero.

Light Color Pickers



Color Picker (HSL) – Hue horizontal, saturation vertical, luminance slider

Color Picker (HSB) – Hue horizontal, brightness vertical, saturation slider

Color Picker (Kelvin) – color temperature scale horizontal, vertical has no meaning, brightness slider.

True Color (Random) – random color picker.

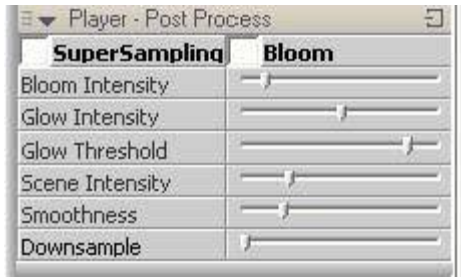
Enter – press to set the color based on manual RGB color entry.

Intensity – left scrubber for values greater than 1.0, right scrubber for values less than 1.0.

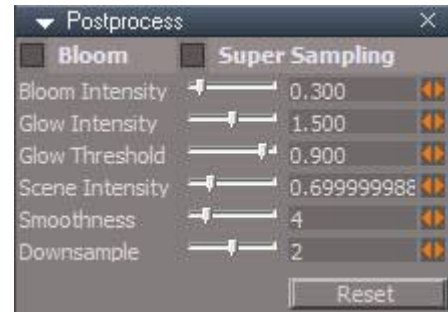
Lum, Sat, Kelvin, Color – press switch between the different color pickers

7.1.5 Real-time Post Processing

Workspace supports real-time post-processing of rendered images to achieve better and more atmospheric images. The post-processing settings panel can be displayed by switching to the Preferences aspect  of the Stack View while the workspace window is active. The following image shows the post-processing settings panel in its default state.

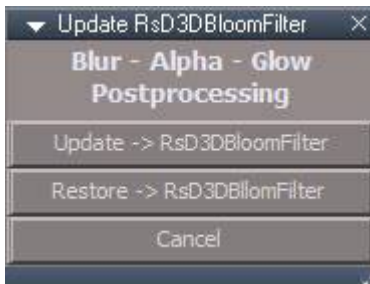


Post-processing panel in the default state.



Post-processing panel in the default state.

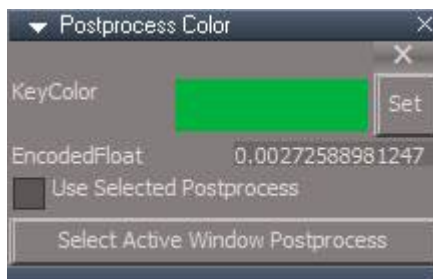
Reset – global reset of all postprocess values



The postprocess library has a script for adding blur, alpha and glow post process effects.

Scene Intensity value below 100 will behave the same as before
 Scene Intensity 100 to 199 to get only the bloom, which is really a blur
 Scene Intensity = 200 to get alpha values as gray color
 Scene Intensity = 300 to get a color key based glow
 Scene Intensity = 301 to get a color key based glow plus scene

The alpha option needs a mesh background with an alpha material to work
 a large inside out sphere centered in the scene works well for the background mesh
 assign a blank d3d material with a Constant Color shader
 constant alpha = 0
 alpha test set to opaque
 alpha test value = 0



The postprocess library has a script to help set values for the glow color key.

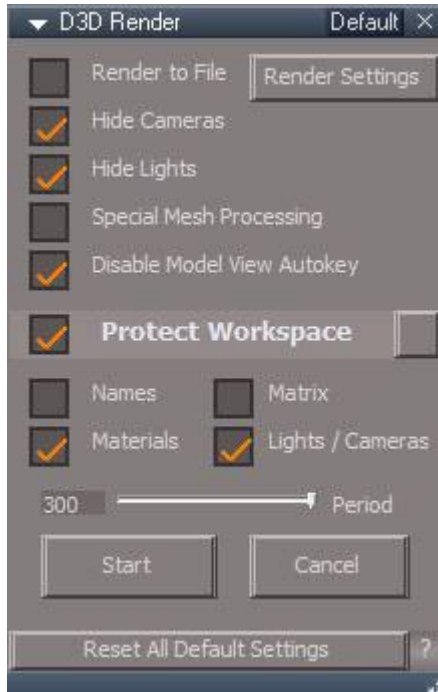
7.1.7 Real-time Render To File



RMB opens an explorer window to the render file path

D3D Render Scripts

Combines modelspace and workspace animations into one D3D workspace render sequence. Can also be used to bake workspace animations to modelspace animation via the autokey setting in modelspace and for rendering command script based animations.



Preview

uncheck the Render to File
check Disable Model View Autokey
press the Start button

Bake Model view keyframes

turn on AutoRecord in Model view
uncheck the Render to File
uncheck Disable Model View Autokey
press the Start button

Render a sequence to files

Check the Render to File
Press the Render Settings button and
uncheck "Save animation from frame"
check "Save sequence starting with"
enter a starting frame number
set the file name
press the "Save settings" button and close the dialog
check Disable Model View Autokey
Press the Start button

set animation playback range in workspace

have both model and workspace 3d views open - use the main view for model

disable modelspace autokey setting, unless specifically transferring workspace animations to modelspace

protect workspace to prevent model view from changing values in workspace

Options:

Render to File - render an animation sequence to files

Render settings - open the D3D Render to File dialog

Hide Cameras - hide cameras during the render

Hide Lights - hide lights during the render

Special Mesh Processing - get NURBS, deformation and metaball shape animations from modelspace

Start - start the render/preview

Cancel - stop the render/preview

Protect Scene from Modelspace

activate the checkbox to turn on protection
 press the button to open the Protect Workspace panel
 Name - stop renaming of nodes
 Materials - stop conversion of workspace materials to lightworks materials
 Matrix - stop transformation value changes
 Light/Camera - stop change of spot light angle and camera fov
 Period - delay value to use with workspace protection

The Matrix option will interfere with workspace transform animations. A keyframe can be used to protect workspace matrix values from modelspace changes. A keyframe can also be used to protect workspace light angle and camera fov values from modelspace changes.

Offline Render Engines

TODO Mention getting started with yafaray and vray render engines

YafaRay Information

January 31, 2021

<https://github.com/YafaRay/libYafaRay>
 Is the where new development for YafaRay can be found

<https://github.com/YafaRay/Core/releases>
 Is where the final release, v3.5.1, can be found