

Lesson 13 – Rendering with V-Ray

Two “engines” – V-Ray (CPU) and V-Ray GPU (GPU)

Specific tools – Cameras, Exposure Control, Lights and Materials

Not all tools work in GPU version

Render Setup

“Common” tab – Settings work across ALL rendering engines

“V-Ray” tab – Mostly filter/anti-aliasing settings.

“GI” tab – Global Illumination (indirect lighting) settings

“Settings” – Systems, Licensing

Cameras

V-RayDomeCamera – Similar to Arnold “Fisheye”

V-RayPhysicalCamera

Very similar to “Physical Camera” (i.e. real camera)

Physical/Free cameras will work with V-Ray (Arnold cameras will NOT)

Basic – Target, Show cone, Horizon, etc...

Sensor & Lens – Related to “cone”

FOV – Cone angle

Focal length – Traditional lenses (Wide<50mm<Telephoto)

Aperture – Traditional camera exposure settings

ISO (film speed) – Sensitivity to light

F-Number – Opening (smaller number = wider opening, 1/f-stop)

Shutter Speed – 1/seconds (bigger = faster)

DoF & Motion blur – Activates/Deactivates.

Controlled by corresponding “Aperture” settings

Smaller f-stop = Larger opening (aperture) = Narrows DOF

Color & Exposure – How exposure is controlled

Exposure Value (EV) - Similar, may need to be a bit lower

Physical Exposure – Controlled by “Aperture” settings

None – No exposure control, not even globally

White Balance – Custom (swatch), Preset, Temperature (K)

Tilt & Shift – Perspective correction. Auto.

Clipping – Clipping plane. Near and Far clipping planes.

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Exposure Control – At camera or global

V-RayPhysicalCamera – Built-in.

See camera “Color & Exposure” parameters

V-Ray Exposure Control – Global-only, non-V-Ray camera views

Mode (settings):

From V-Ray camera – Borrows settings from selected camera

From EV parameter

Photographic” – ISO+f-number+shutter speed

“Physical Camera Exposure Control” – Global-only. non-V-Ray camera views

Lights

V-RaySun – Manual. Click to place sun, drag for target. Use transform to position

Intensity Multiplier – Intensity (light energy)

Size Multiplier – Size of sun object

NOTE: Sun Positioner will NOT work in V-Ray

V-RayLight – Generic light.

Type:

Plane, Disc, Sphere – General lights of specific shapes.

Units – Light intensity

Invisible – Light shape will not render

Dome – Used for Image Based Lighting (IBL) with HDRI images

Mesh – Turns selected geometry into a light source

V-RayIES – Requires “IES” file. Light object (shape) does not render

V-RayAmbientLight – General, non-directional light

V-Ray Light Lister – Same as “Light Lister”, but with V-Ray lights added.

Found in V-Ray toolbar

Photometric Lights – Will work. Much slower than V-Ray lights

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Environment

V-RaySky – Assigned with V-RaySun. Controlled by V-RaySun parameters.
V-RaySun will work without V-RaySky (i.e. when using a bitmap)

V-RayBitmap/Bitmap (3ds MAX) – Set to “Screen” & adjust “Output”

Materials

“V-RayMtl” – Main V-Ray material.

Basic parameters:

Diffuse – main color

Preset – Material templates

Reflect – Reflection color

Roughness – How shiny or dull

Refract – Transparency

Translucency – SSS

Self-Illumination - Glowing

“V-RayOverrideMtl” (Override material)

Allows assigning different materials to lighting components (i.e. GI)

Use to remove/reduce color bleed

“V-RayMtlWrapper” (Material Wrapper)

Controls Global Illumination (GI) from underlying material

Lowering/removing GI will lower reflected light energy

Matte Properties – “Matte Surface” will render background.

“Shadows” – Surface receives shadows

“V-Ray2SidedMtl” – Separate materials front and back. Used for translucency

“V-RayLightMtl” – Self-illuminated material

Others – Special cases (skin, etc...)

Lesson 13 – Rendering with V-Ray (cont...)

Materials (cont...)

“Physical Material” – 3ds MAX material
Will not render using V-Ray GPU

Textures

“VRayBitmap” – Similar to 3ds MAX’s “Bitmap”.

PSD’s are flattened

IFL-only (Image File List - individual images), not AVI’s

May be used as a background image

3ds MAX “Bitmap” & Procedurals (“Noise”, “Gradient Ramp”, etc...)

PSD’s allow layer selection

AVI’s, IFL’s (Image File List - individual images)

May be used as a background image (both CPU & GPU)

OSL (Open Shader Language)

Geometry

“VRayPlane” – Infinite ground plane. Need to material.

“VRayClipper” – Clips all geometry with assigned material.
Can exclude geometry, like a ground plane