

# BLENDER ADDON

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# RENDERING MORE REALISTIC IMAGES AND VIDEOS

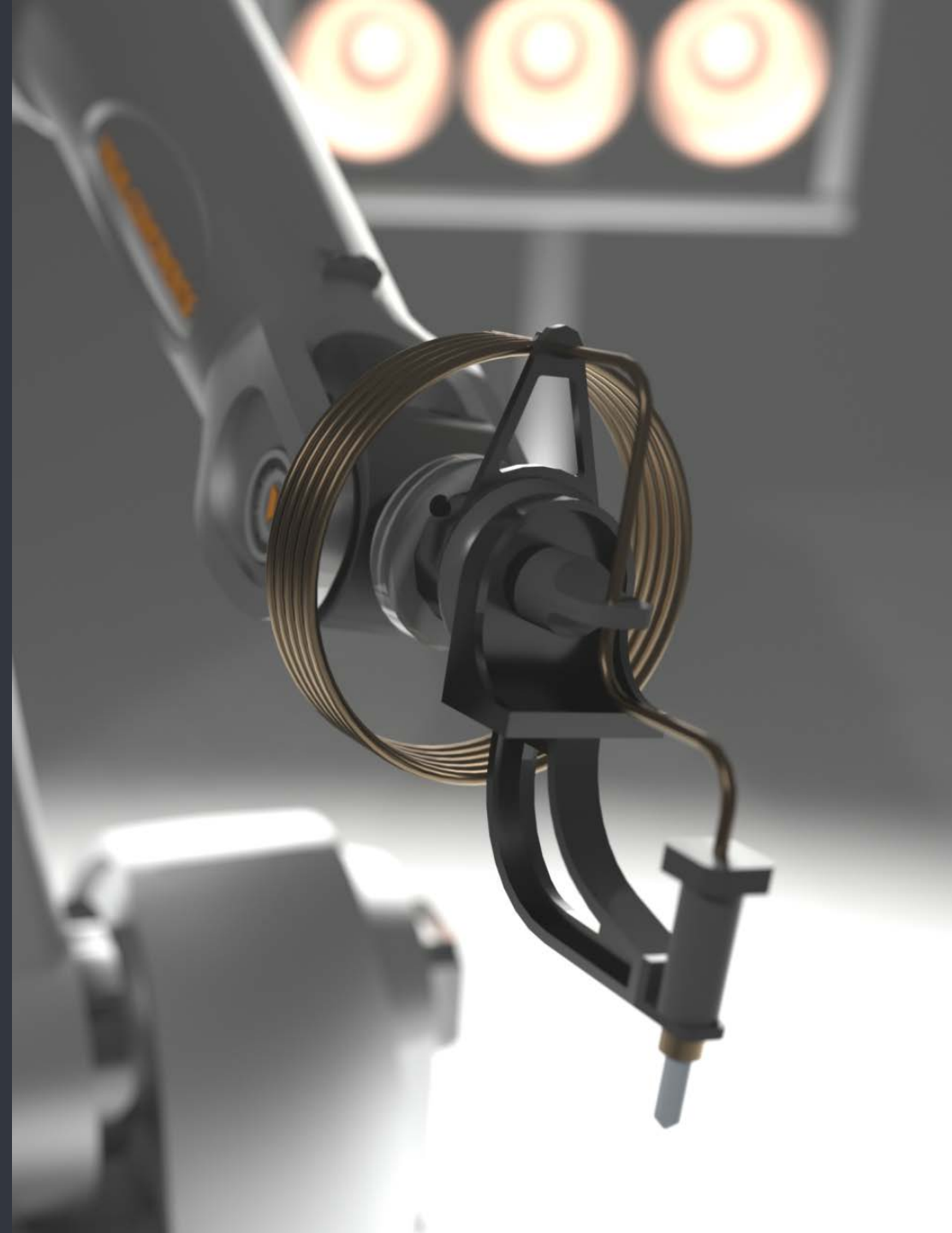
# VISUALIZATION

- ▶ Create higher quality content for Sales and marketing purposes
- ▶ This picture is the direct output from Visual Components



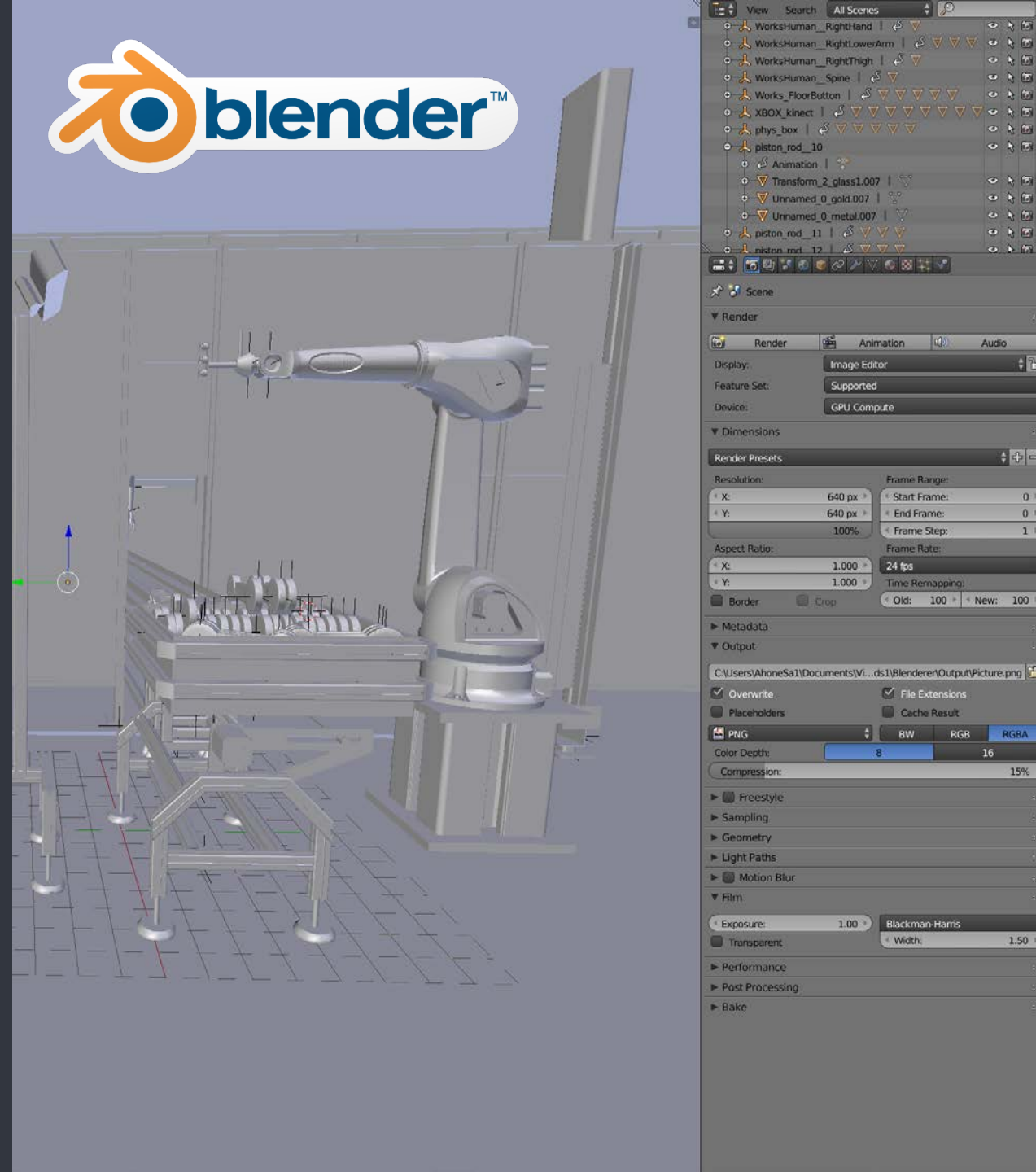
# PHOTO REALISM

- ▶ Games and movies are photorealistic
- ▶ Why not industrial simulation?



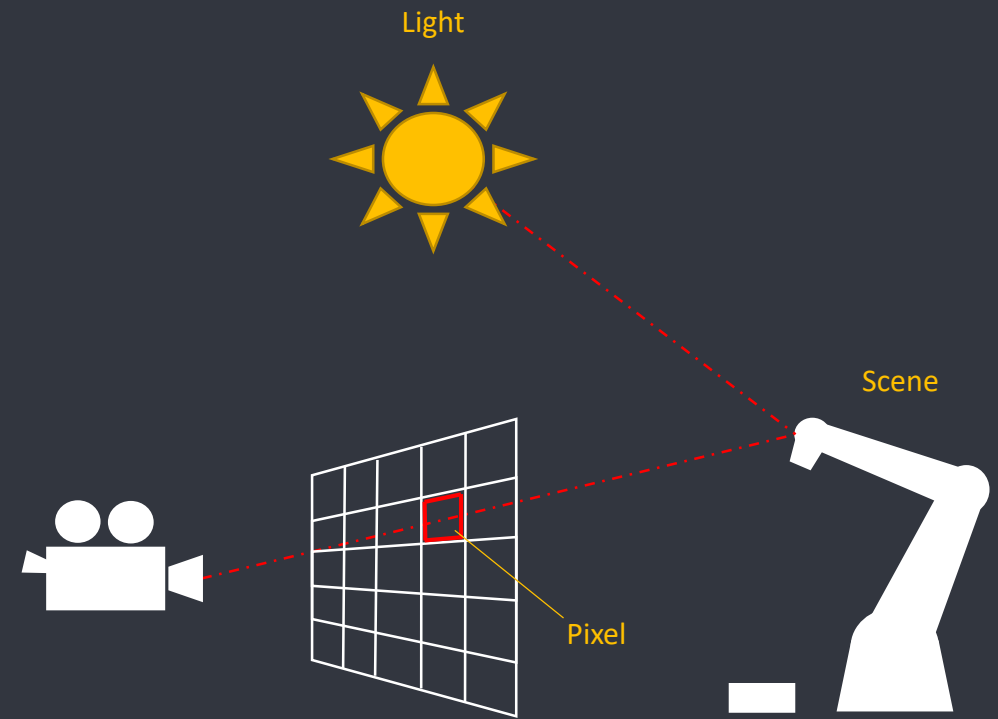
# WHAT IS BLENDER

- ▶ Blender is an open source 3D creation software for
  - ▶ Modeling
  - ▶ Animation
  - ▶ Video editing
  - ▶ Game creation
  - ▶ Rendering
  - ▶ ...



# RAY TRACING

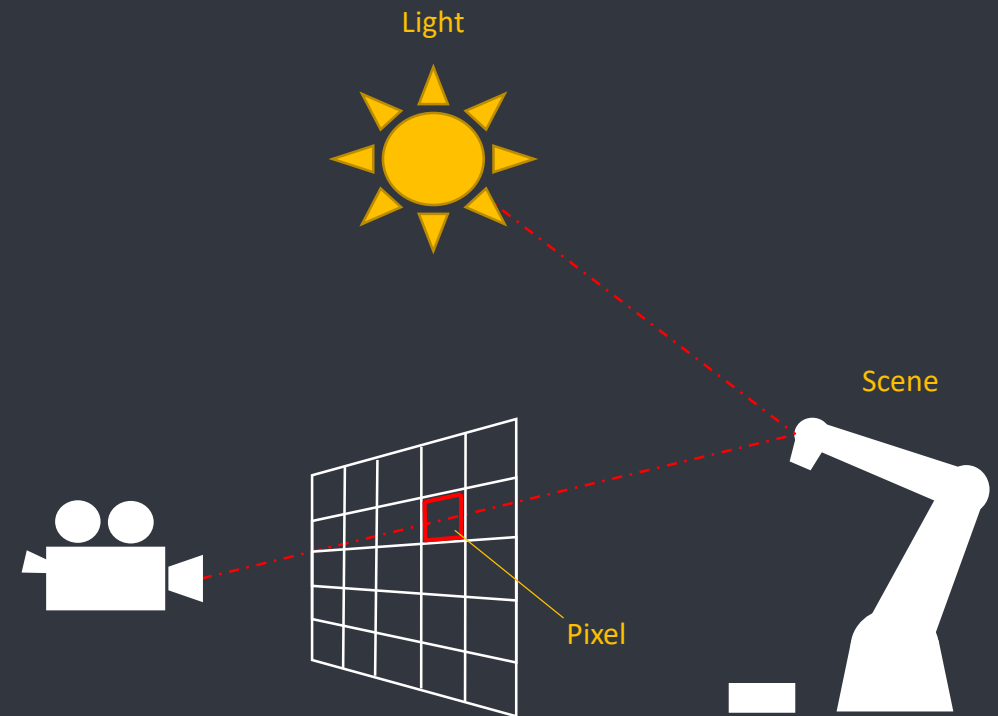
- ▶ Blender includes Cycles rendering engine
- ▶ Cycles is a ray tracing render engine
- ▶ Ray tracers simulate the path of light in the scene



# RAY TRACING

## ► Cons

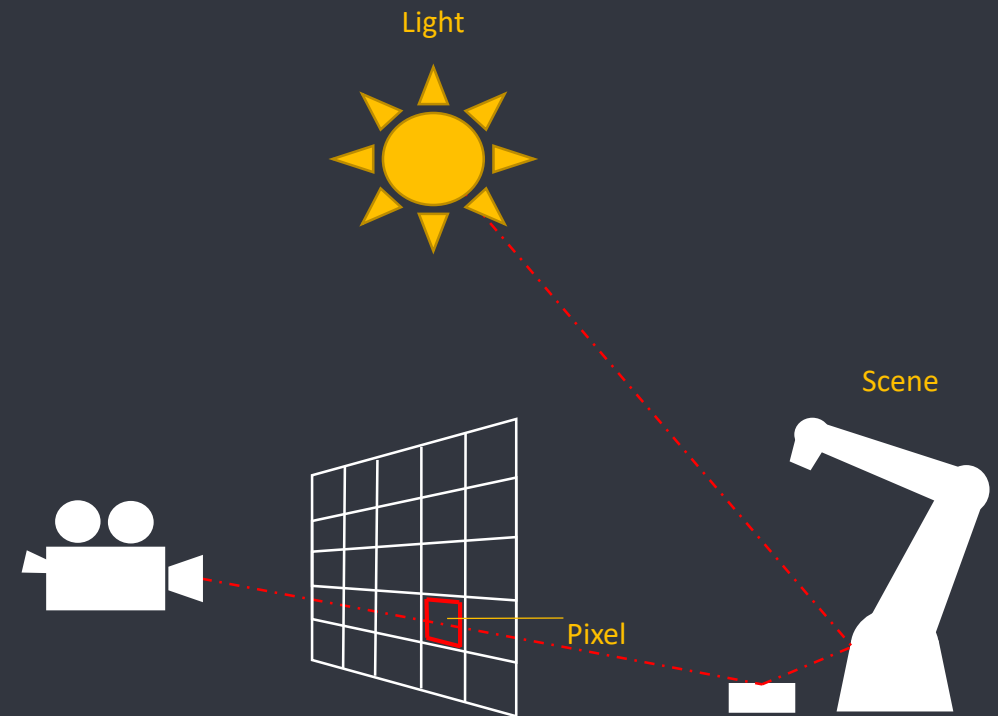
- It's slow
- Sometimes tedious  
Material and lighting  
definition



# RAY TRACING

## ► Pros

- Realistic lighting
- Realistic shadows
- Realistic reflections
- Realistic materials
- => Photorealism



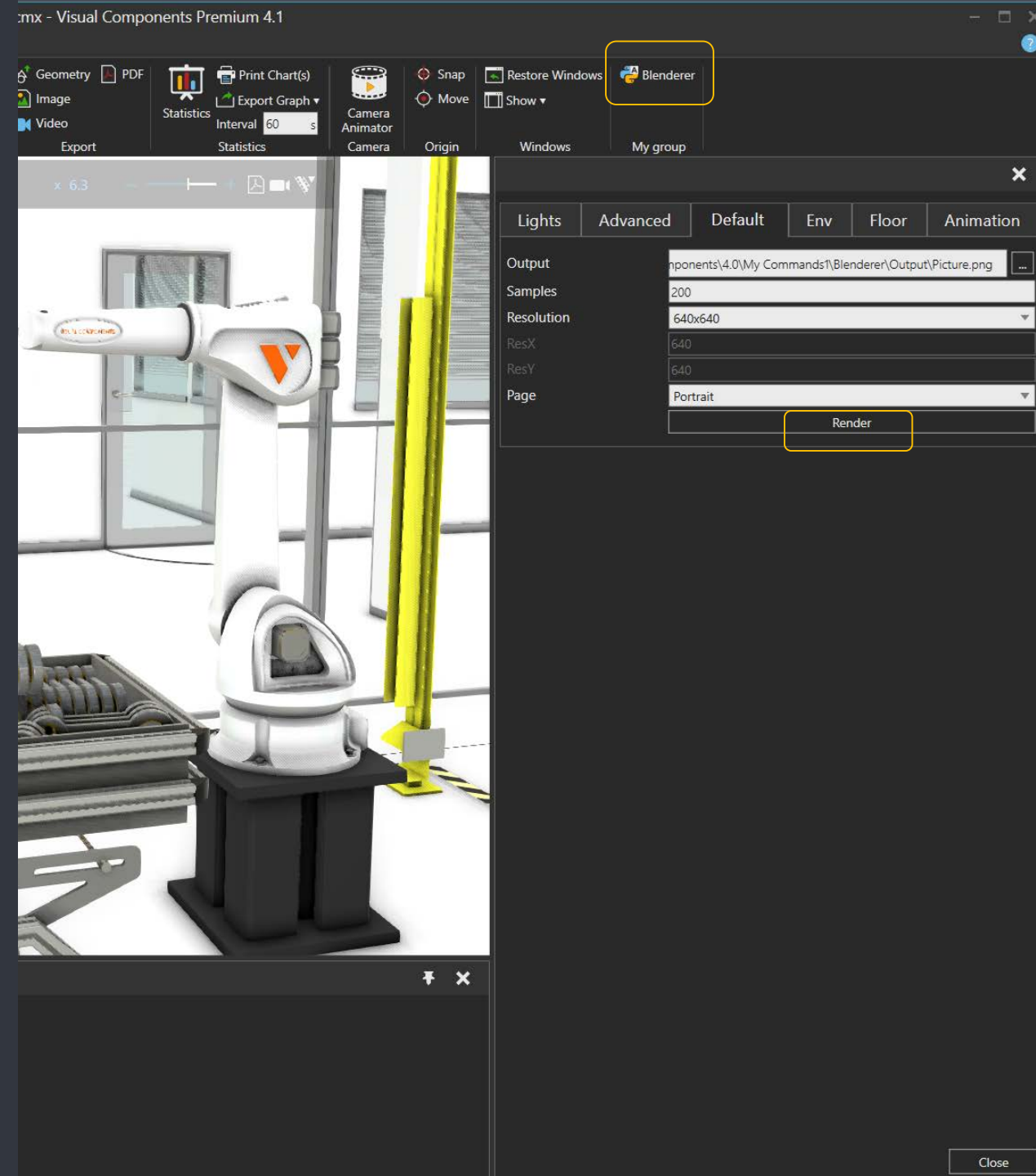


# BLENDERER

Visual Components open source Python addon

# BLENDERER ADDON

- ▶ Allows converting a simulation scene into a blender scene
- ▶ And rendering it with ray tracing render engine (Cycles)



# WORK FLOW

- ▶ Create/Open layout
- ▶ Add lights
- ▶ Define materials
- ▶ Set rendering options
  - ▶ Resolution
  - ▶ Samples
  - ▶ Bounces, ...
- ▶ Render
- ▶ Wait
- ▶ Enjoy the results!

# INSTALLING

- ▶ Install Blender (v2.79)
  - ▶ [www.blender.org](http://www.blender.org)
- ▶ Add Blenderer python plugin to My Commands

# SOME FEATURE HIGHLIGHTS

Blenderer addon

# EASY FLOOR STYLING



Alu



Asphalt



Concrete



Slate



Oak



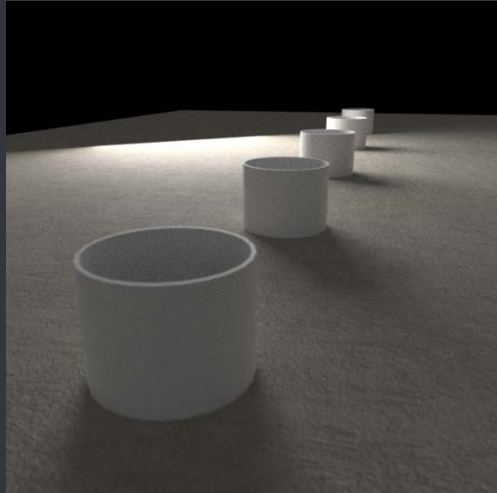
<Custom>

Lights	Advanced	Default	Env	Floor	Animation
Visible	<input checked="" type="checkbox"/>				
BorderSize	8000				
Style	Alu				
ColorTexture	C:\Users\AhoneSa1\Pictures\Saved Pictures\wallpaper\Preser...				
BumpTexture	C:\Users\AhoneSa1\Documents\Visual Components\4.0\My C...				
TextureSize	1400				

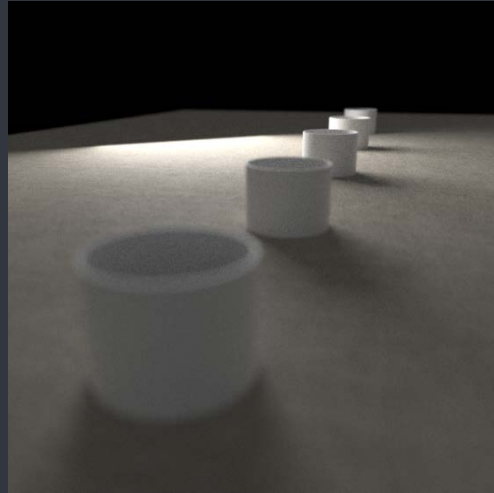
Properties

Close

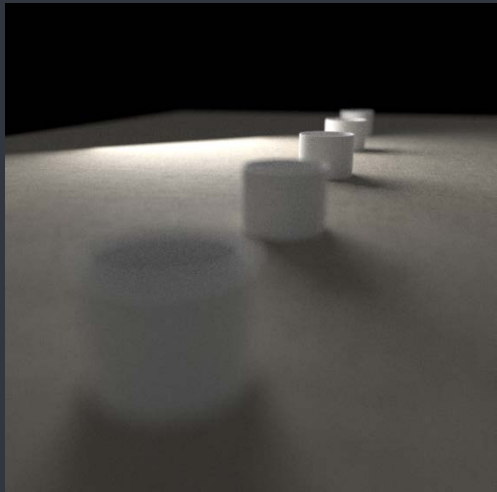
# DEPTH OF FIELD



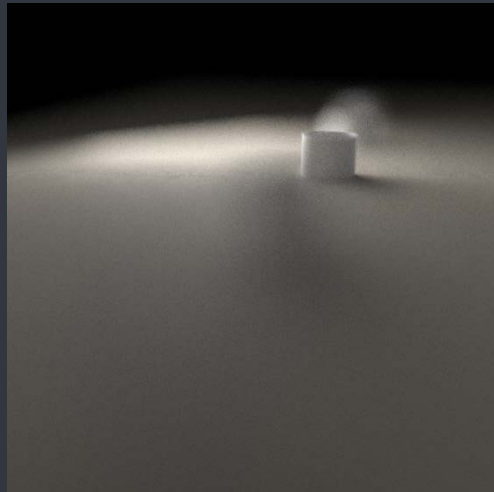
DOF 5



DOF 25



DOF 50



DOF 500

Blender interface showing the Properties panel for the Depth of Field settings.

The panel is divided into tabs: Lights, Advanced, Default, Env, Floor, and Animation. The Advanced tab is selected.

The settings shown are:

- Caustics: ☐
- UseFreestyle: ☐
- CameraFOV: 60
- OpenInBlender: ☒
- RenderDevice: GPU
- SampleClampDirect: 2
- SampleClampIndirect: 2
- TransparentMaxBounces: 2
- TransparentMinBounces: 0
- MaxBounces: 6
- MinBounces: 0
- DiffuseBounces: 2
- GlossyBounces: 2
- TransmissionBounces: 8
- VolumeBounces: 0
- AOBounces: 2
- TileX: 256
- TileY: 256
- Materials: Read From Table
- TableDelimiter: ,
- DepthOfFieldNode: Null
- DepthOfFieldRadius: 50
- Mist: 0

The DepthOfFieldNode and DepthOfFieldRadius settings are highlighted with a yellow box.

Close

# MIST



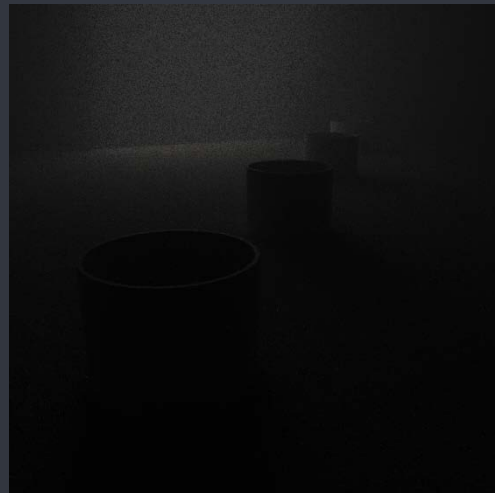
Mist 0%



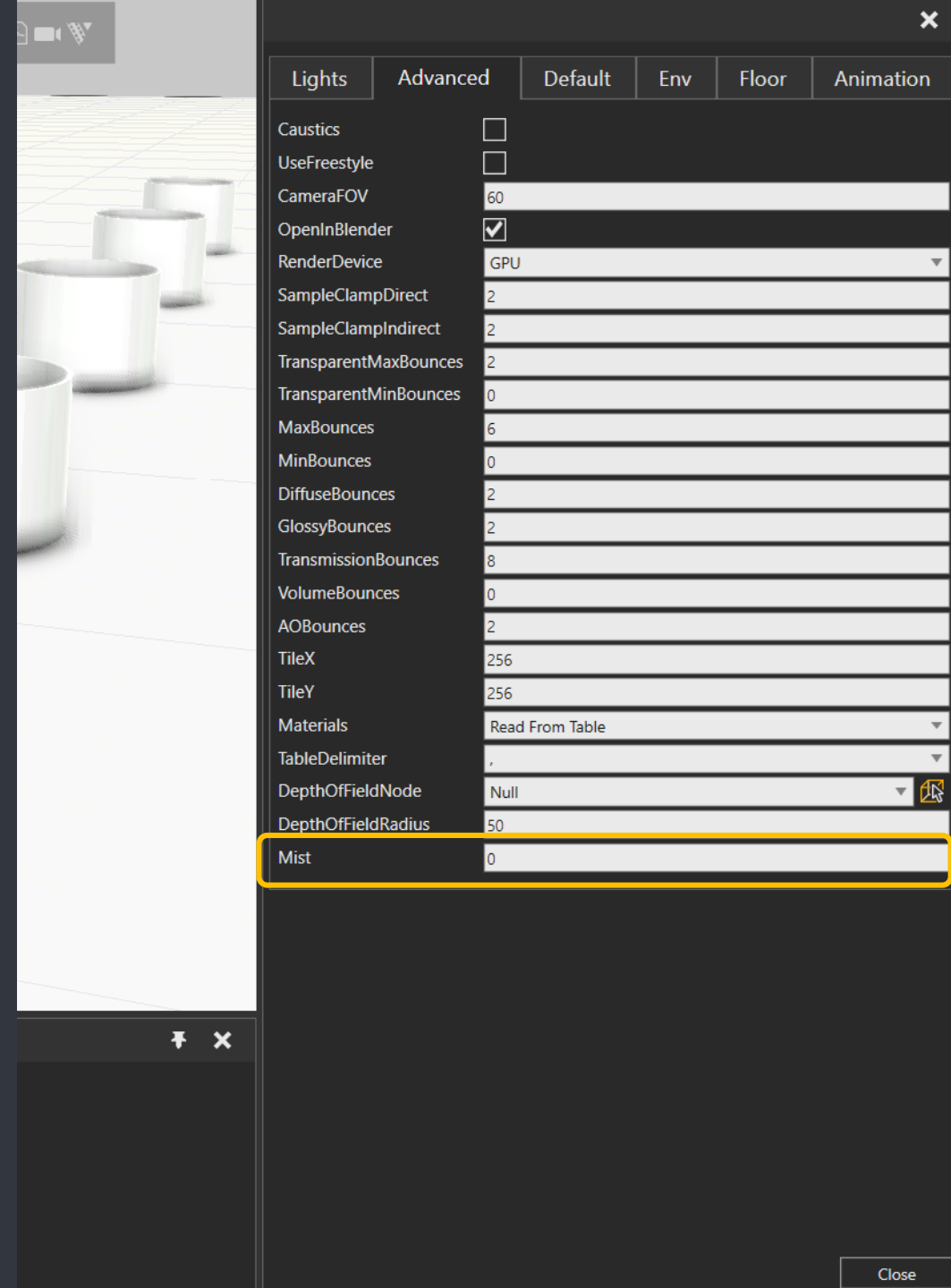
Mist 2.5%



Mist 5%

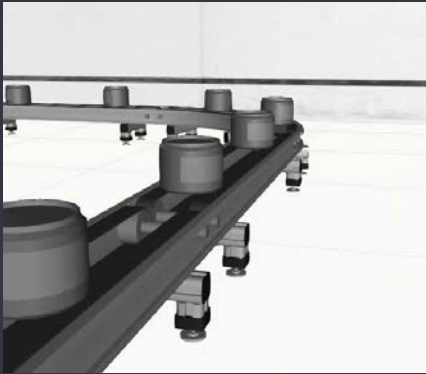


Mist 10%





# ANIMATION RENDERING



Lights	Advanced	Default	Env	Floor	Animation
RecAnimation	<input type="checkbox"/>				
Start	5				
End	10				
StepSize	0.04				
<div>RenderAnimation</div>					

# SOME EXAMPLES



