

Master Lighting and Interiors

November 3, 2016

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Topics

- Physical (local) Lights
 - Emissive
 - Area Light
 - Point Light
 - IES Profiles
- Best Practices for Interiors
- Hands on:
 - SketchUp Model
 - KeyShot Scene
- Q & A



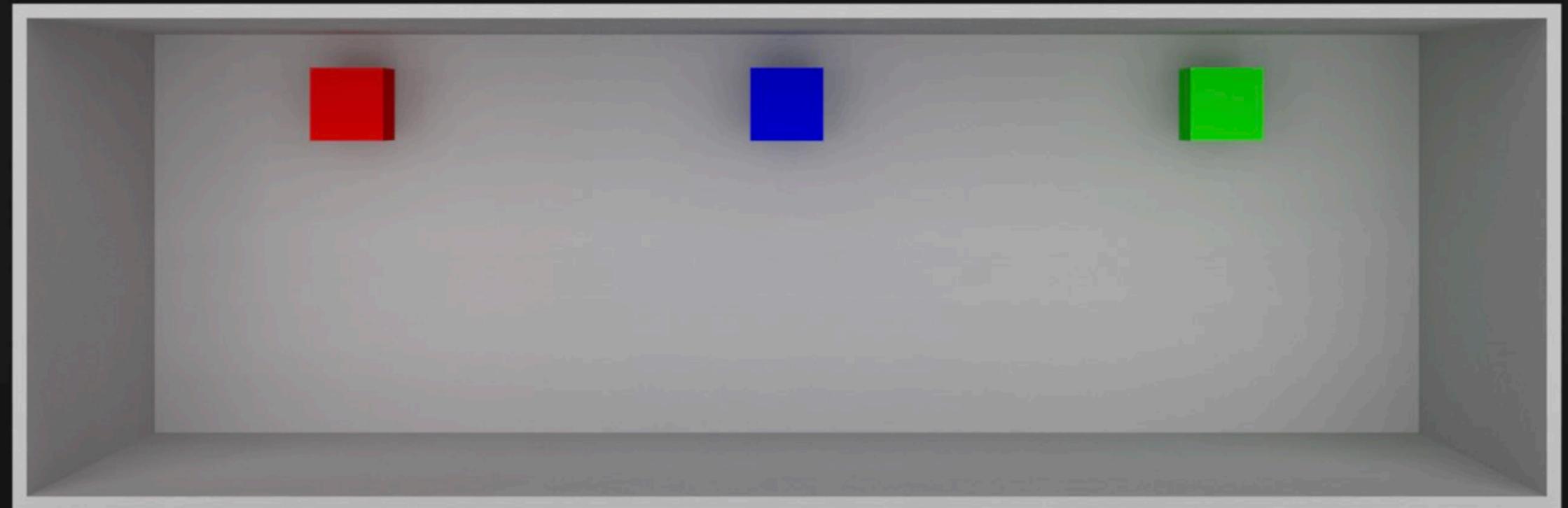
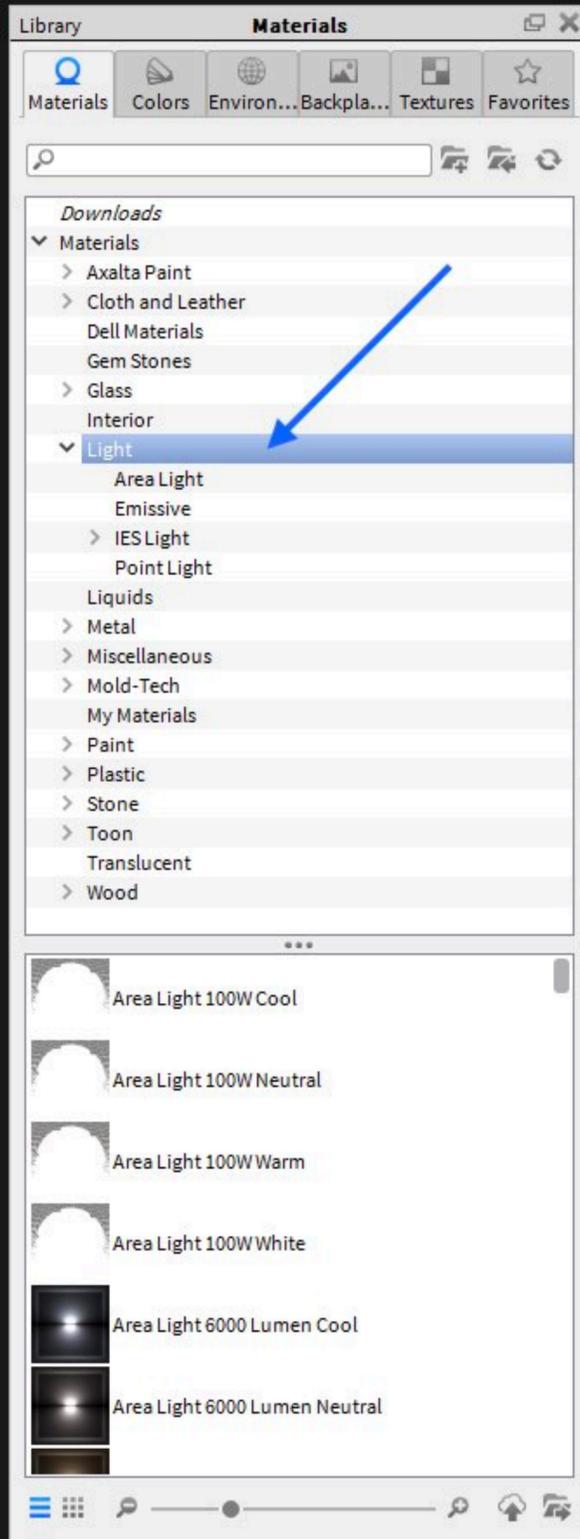
Computer Specs

- Mac Pro (late 2013)
- Running Windows 10 via Parallels
 - Xeon E5-1680v2
 - 12 Virtual Cores
 - 8 GB RAM
- Running KeyShot 6.2.105

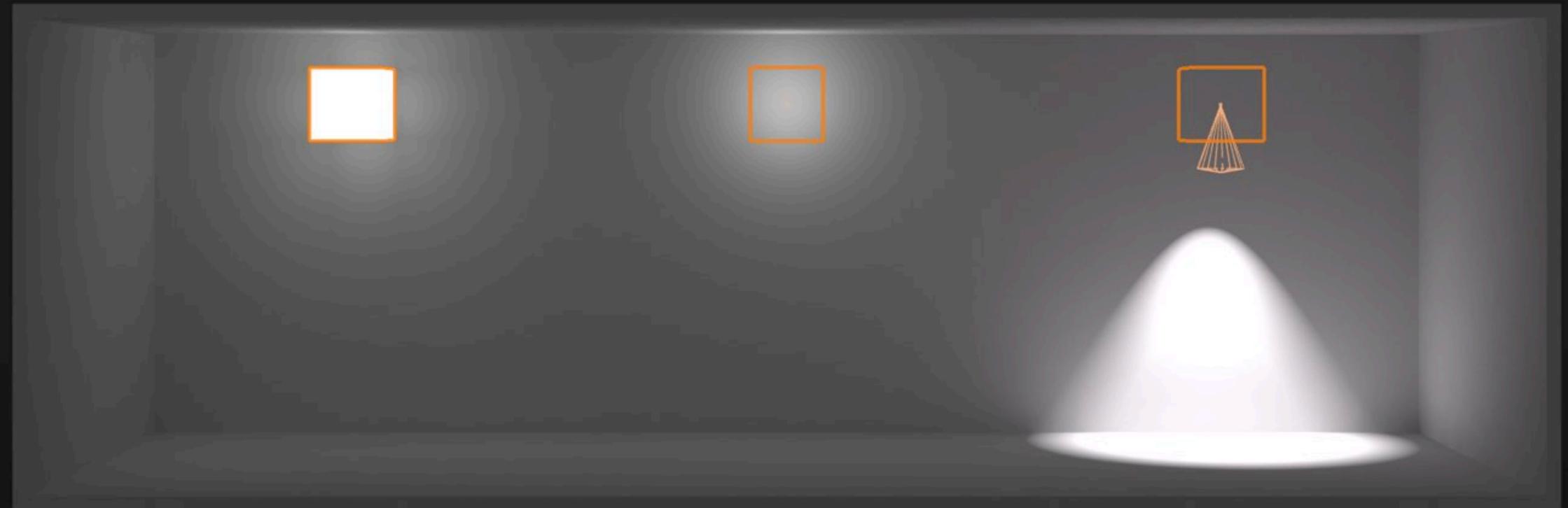
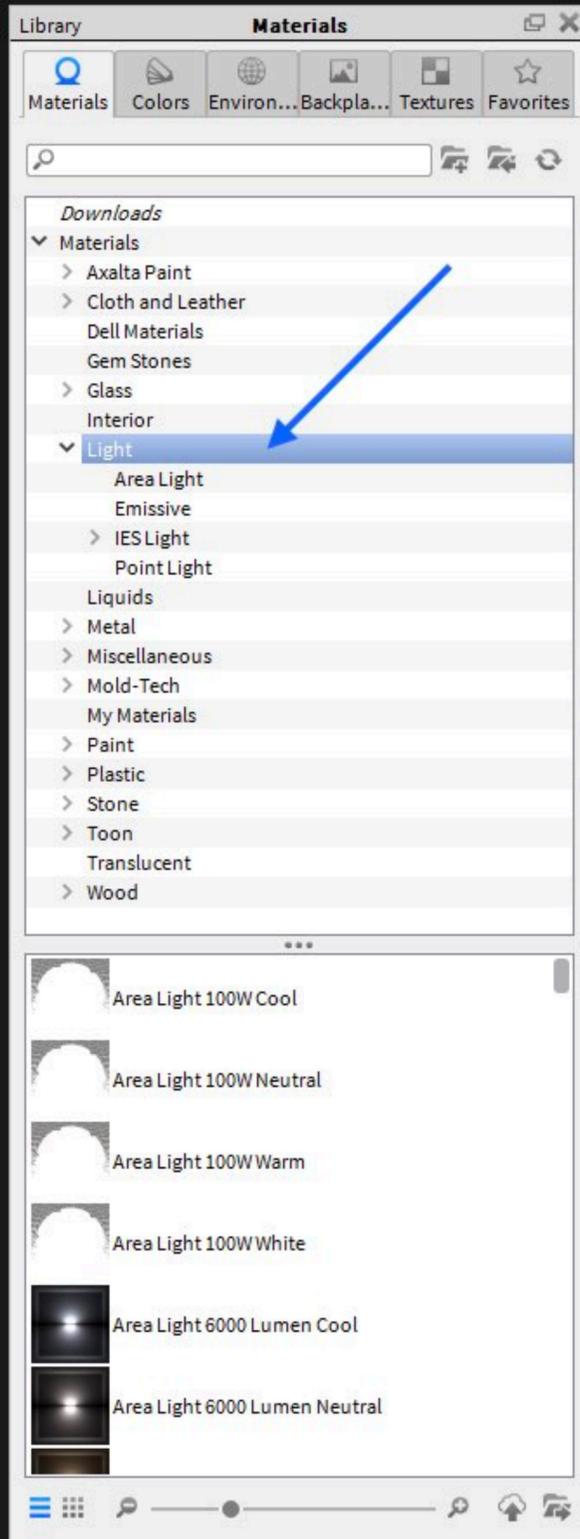


**Is it possible to add
lights in KeyShot?**

Lights are added as a material to a part



Lights are added as a material to a part



**Where can physical
lights be used?**



Area Lights

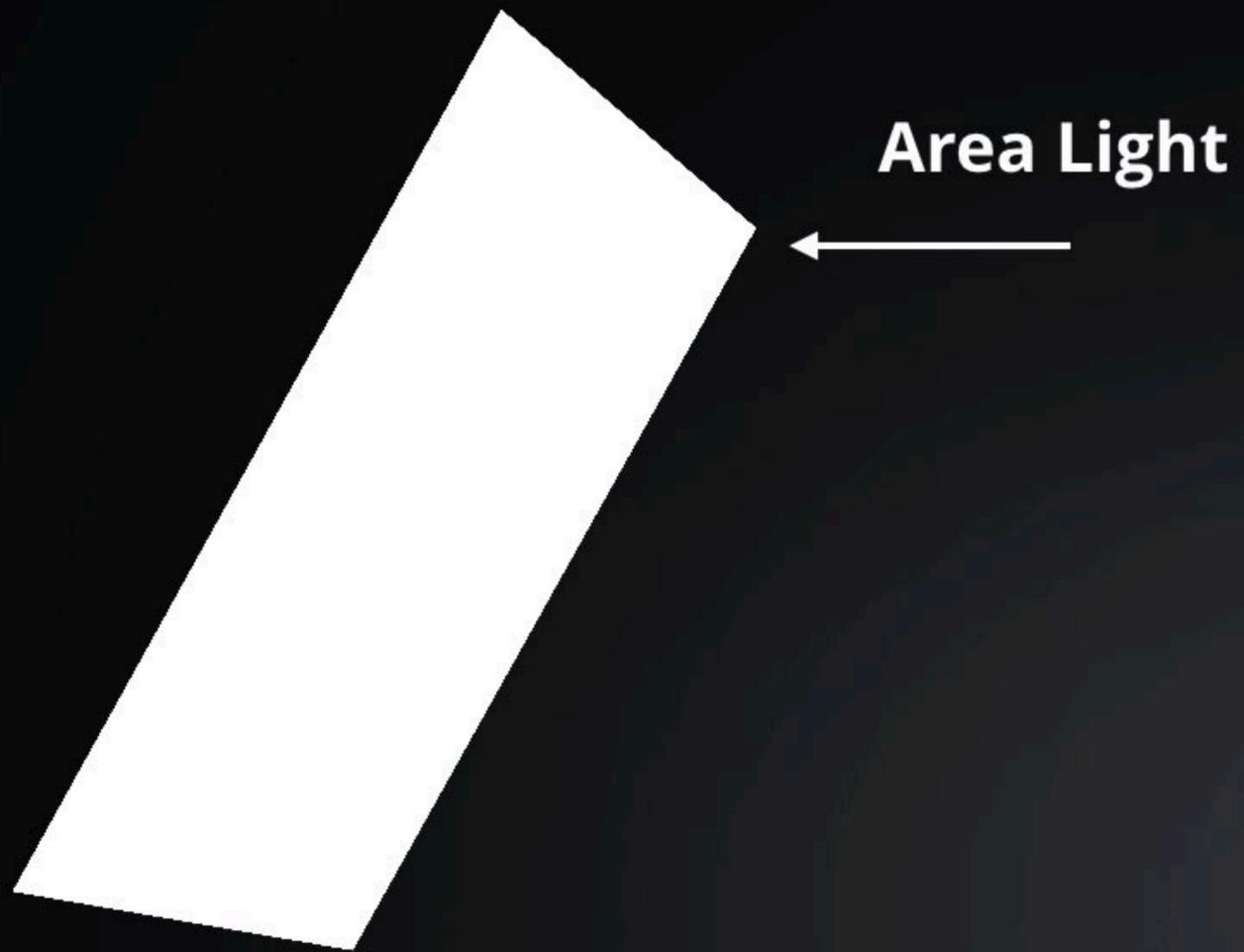




Area Light







Area Light



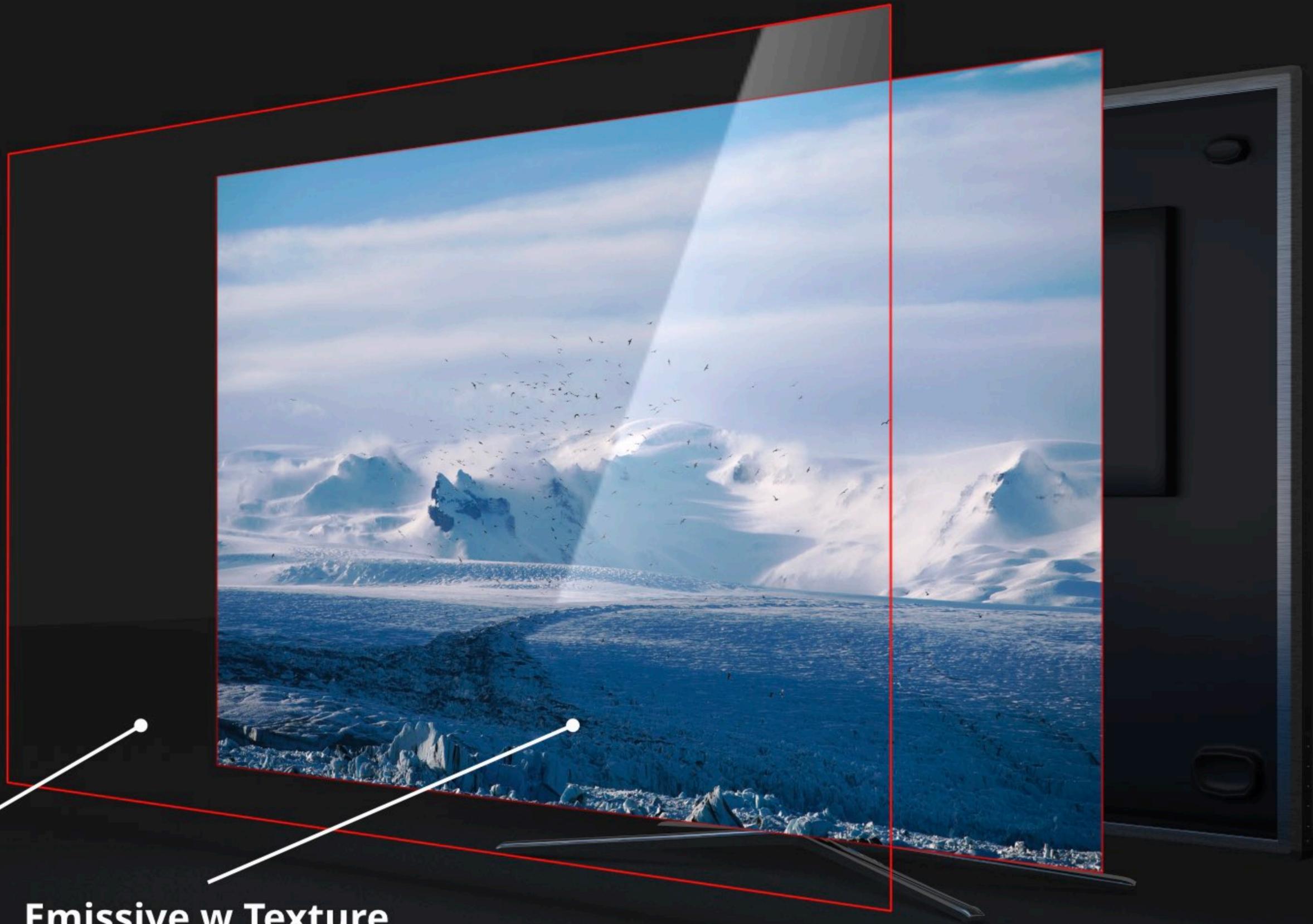
IES Profile



Point Light





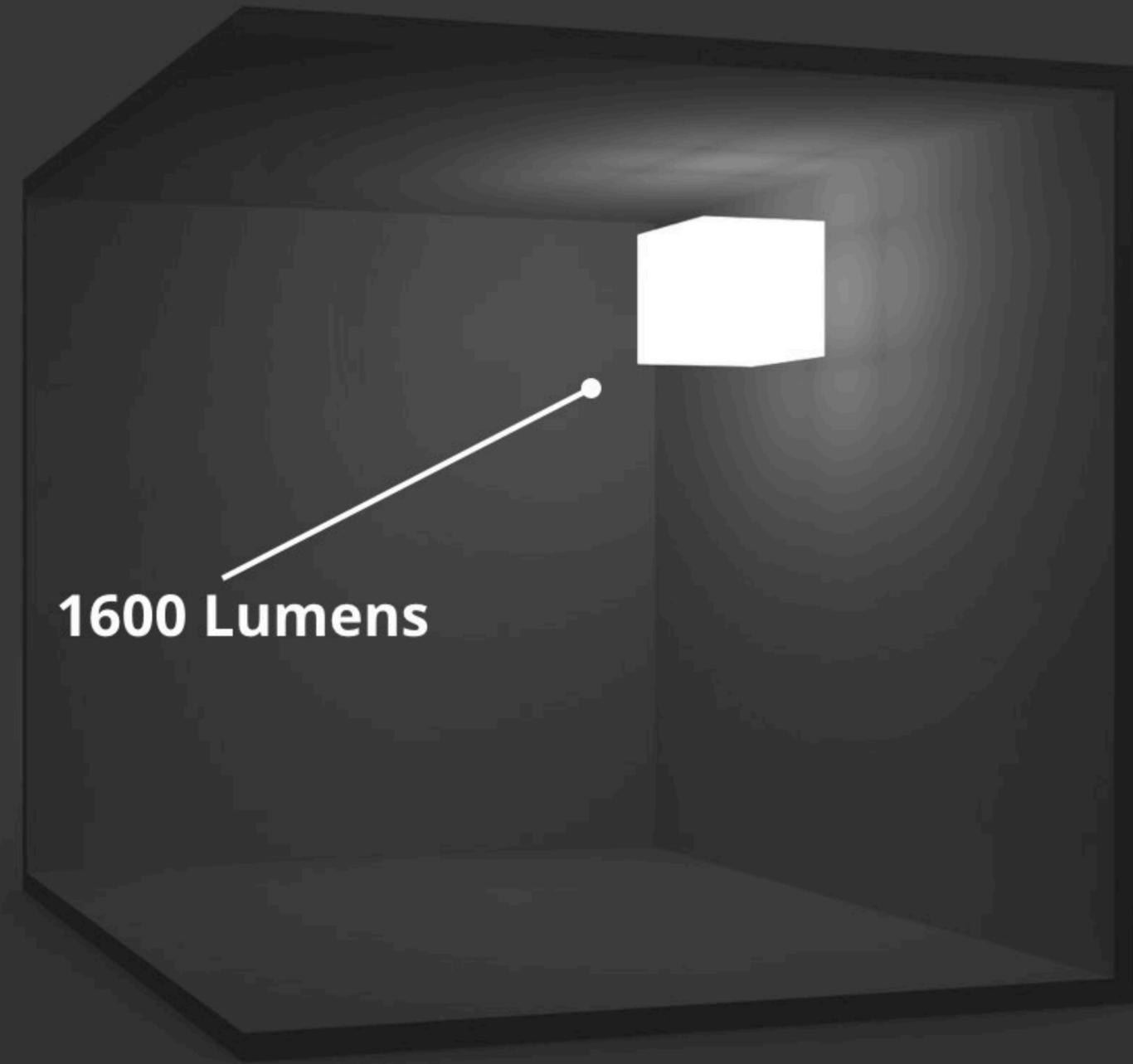
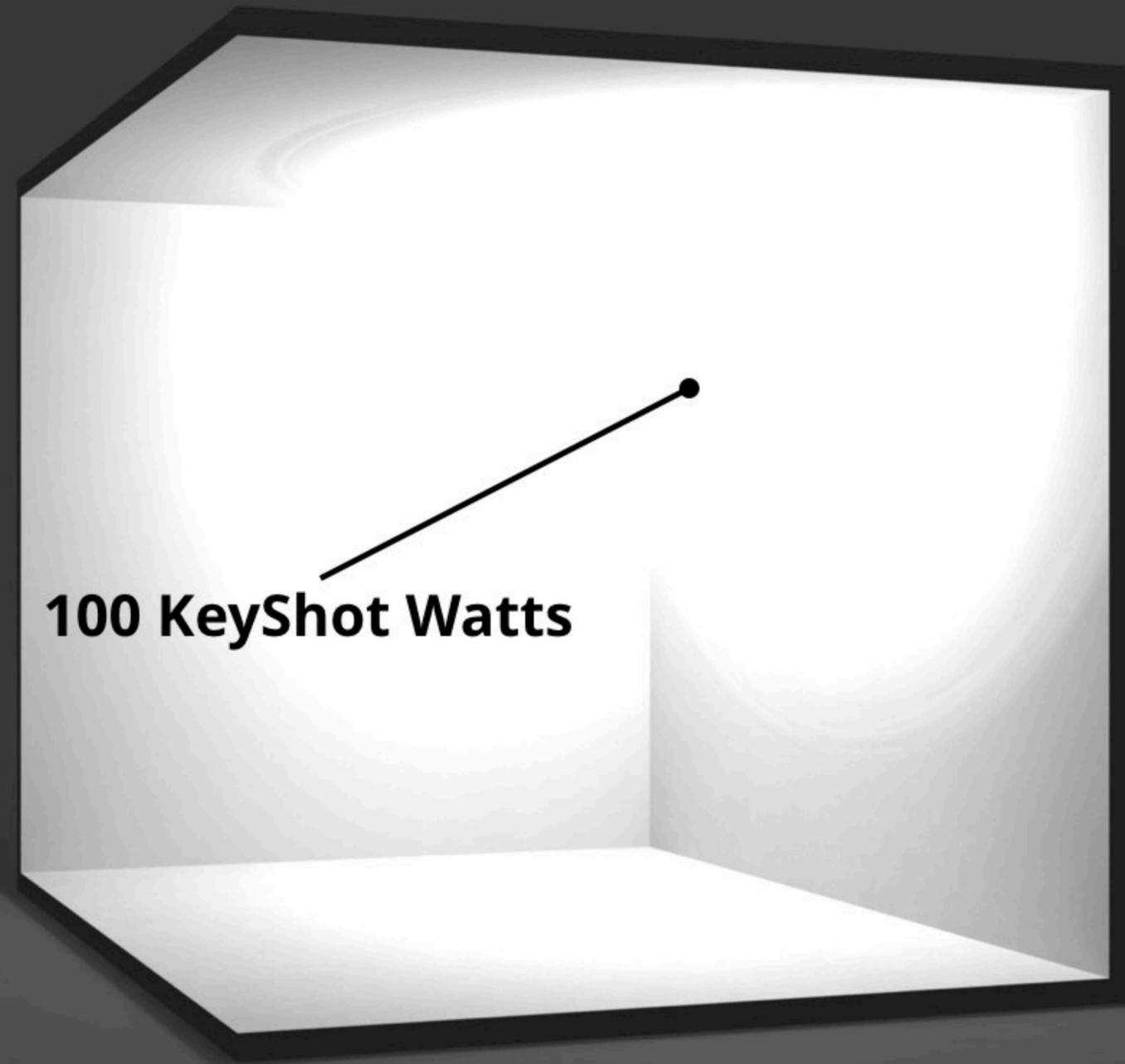


Glass

Emissive w Texture

Physical Light Types

**Use Lumens or Lux instead of Watts.
Lumens measure visible light (luminous flux)**



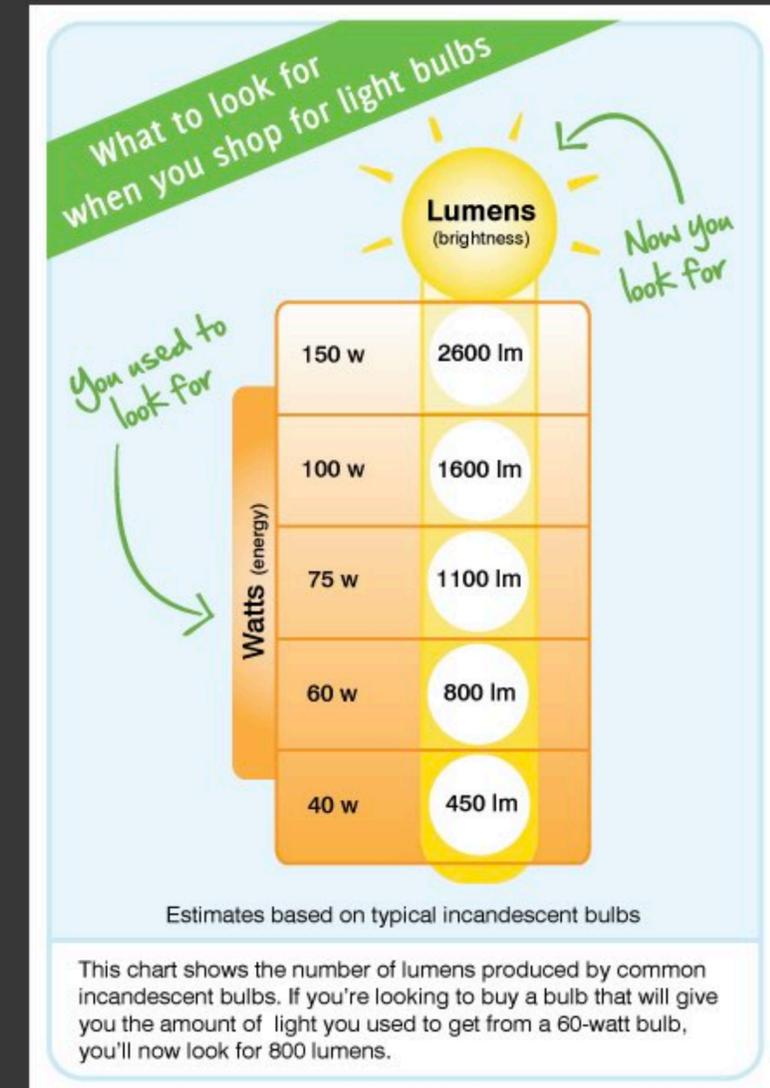
100 KeyShot Watts = approx. 6830 lumen
Watts measure radiant flux



Shadow JM30 CREE XPL/MT-G2 Flashlight — 1980 lumens

Lumens measure Light Output

- 150 watt incandescent bulb equals 2600 lumens
- 100 watt incandescent bulb equals 1600 lumens
- 60 watt incandescent bulb equals 800 lumens
- 40 watt incandescent bulb equals 450 lumens



Lumens vs Lux



- Lux are lumen per square meter
- More consistent output on different sized geometry

**Area Light
Diffuse**

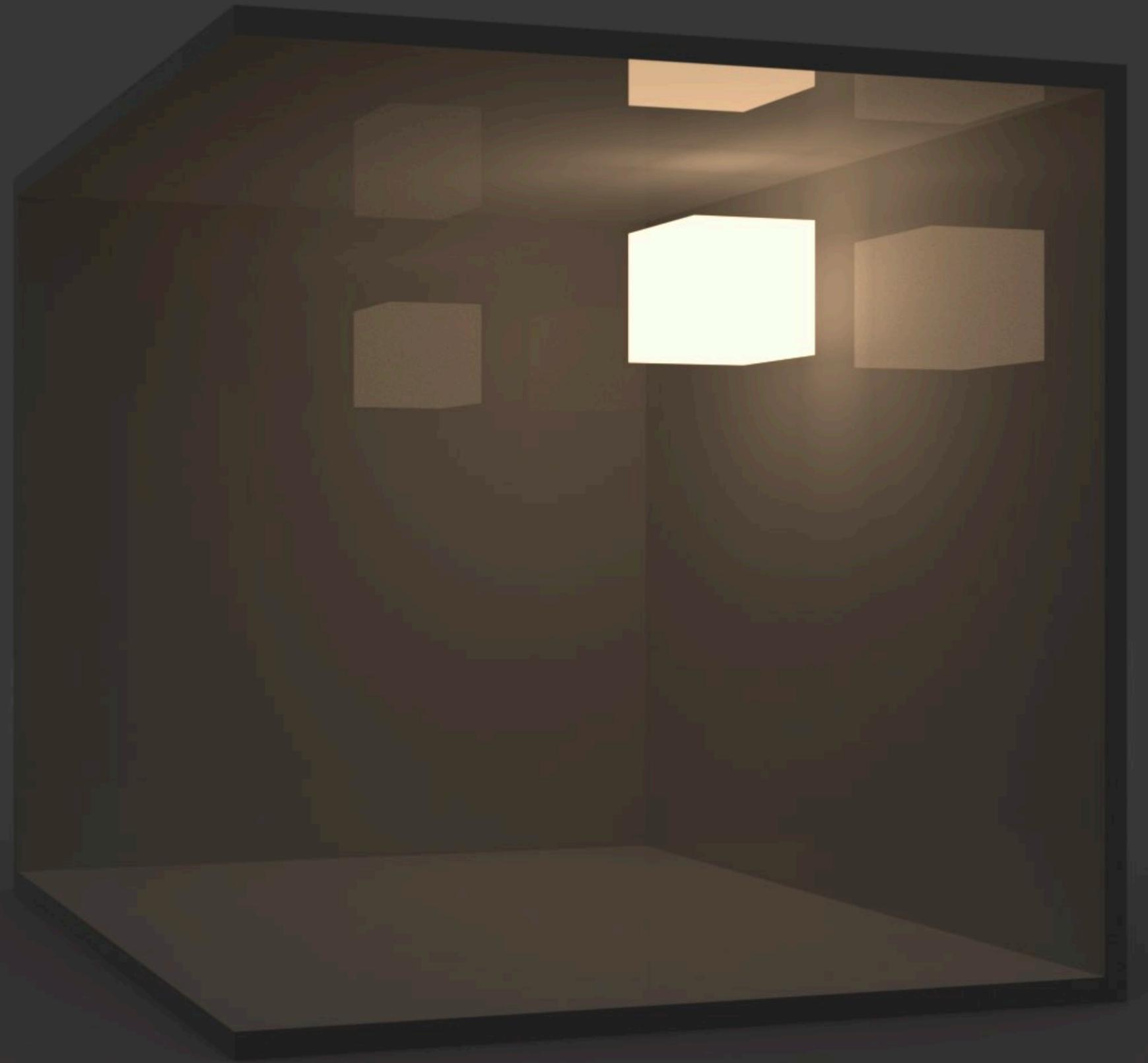
**Point Light
Diffuse**

IES Profile



Area Light Diffuse

- Geometry becomes light emitting shape
- Light is cast normal to each surface
- Can be made invisible
- Soft shadows
- Slowest Advanced light type





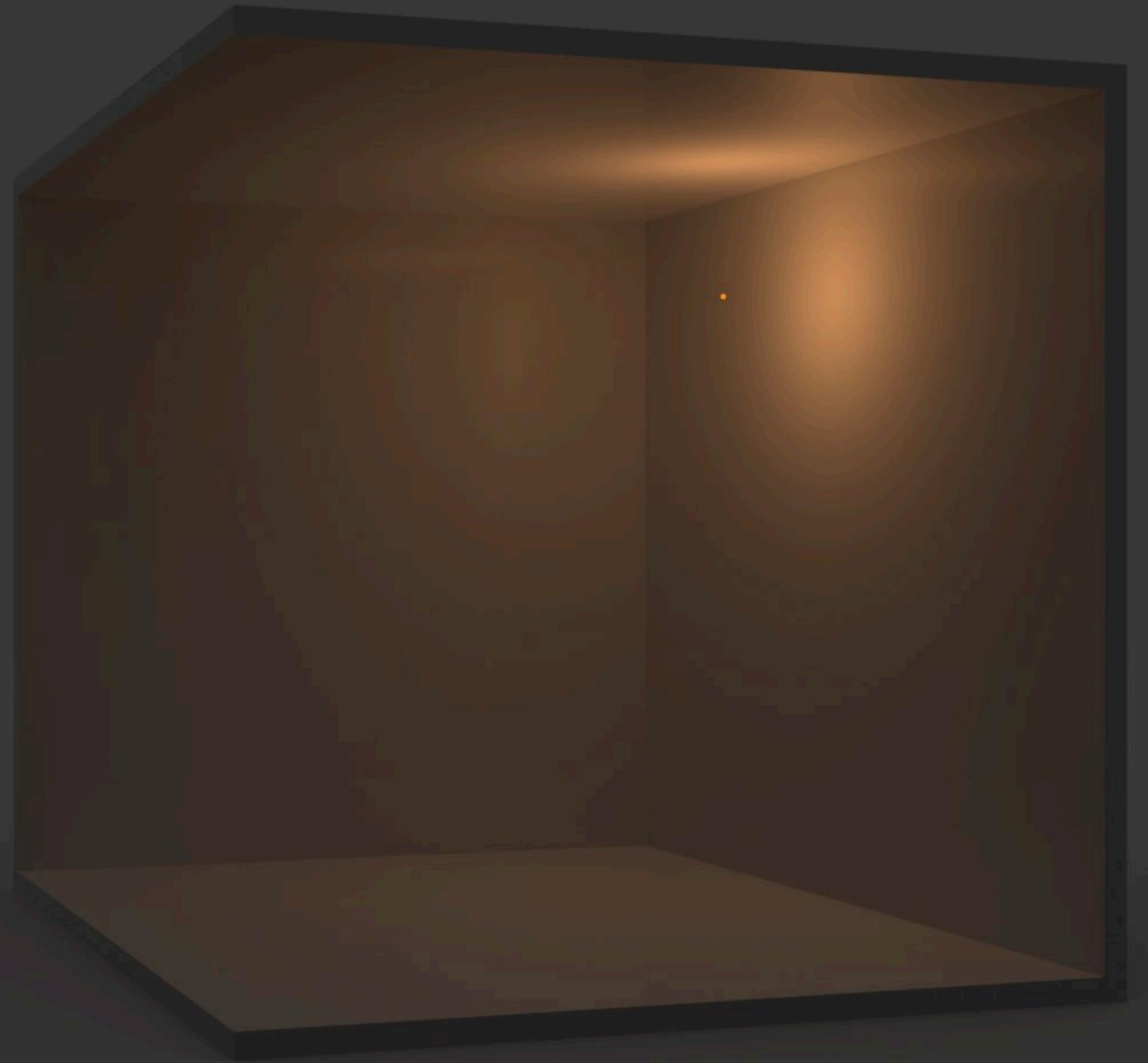
Lights: Hood, Shelves, Backsplash, Ceiling



Lights: Windows

Point Light Diffuse

- Invisible Light Source
- Single point of light replaces part
- Omnidirectional
- Fastest Advanced light type

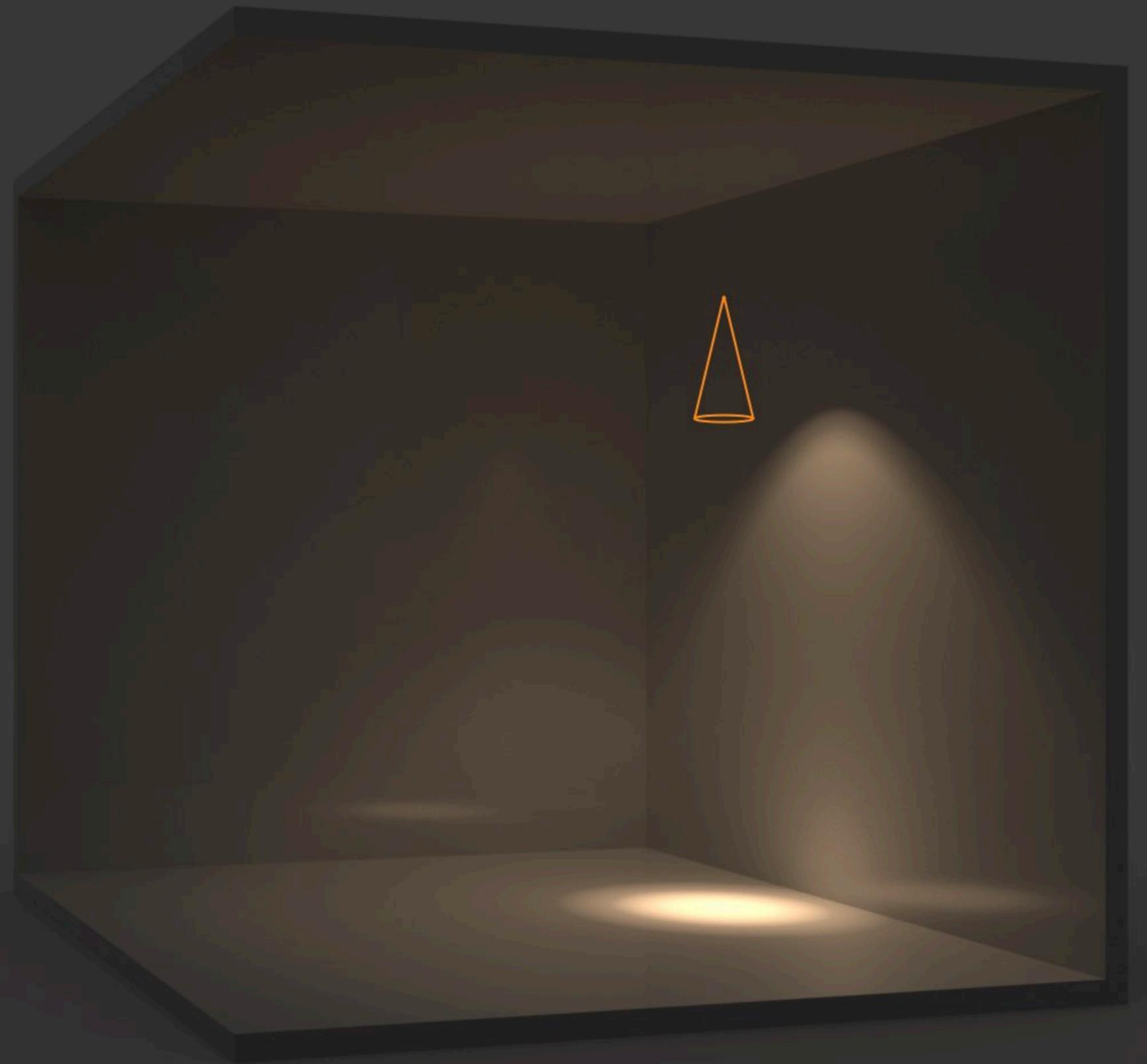




Lights: Spotlights

Point Light IES Profile

- Invisible Light Source
- Profile replaces geometry
- IES Light Profiles define intensity, direction, and distribution of light
- Represented as wireframe
- Can be moved and repositioned
- Extremely accurate and realistic
- Intensity is predefined
- Faster than Area Lights

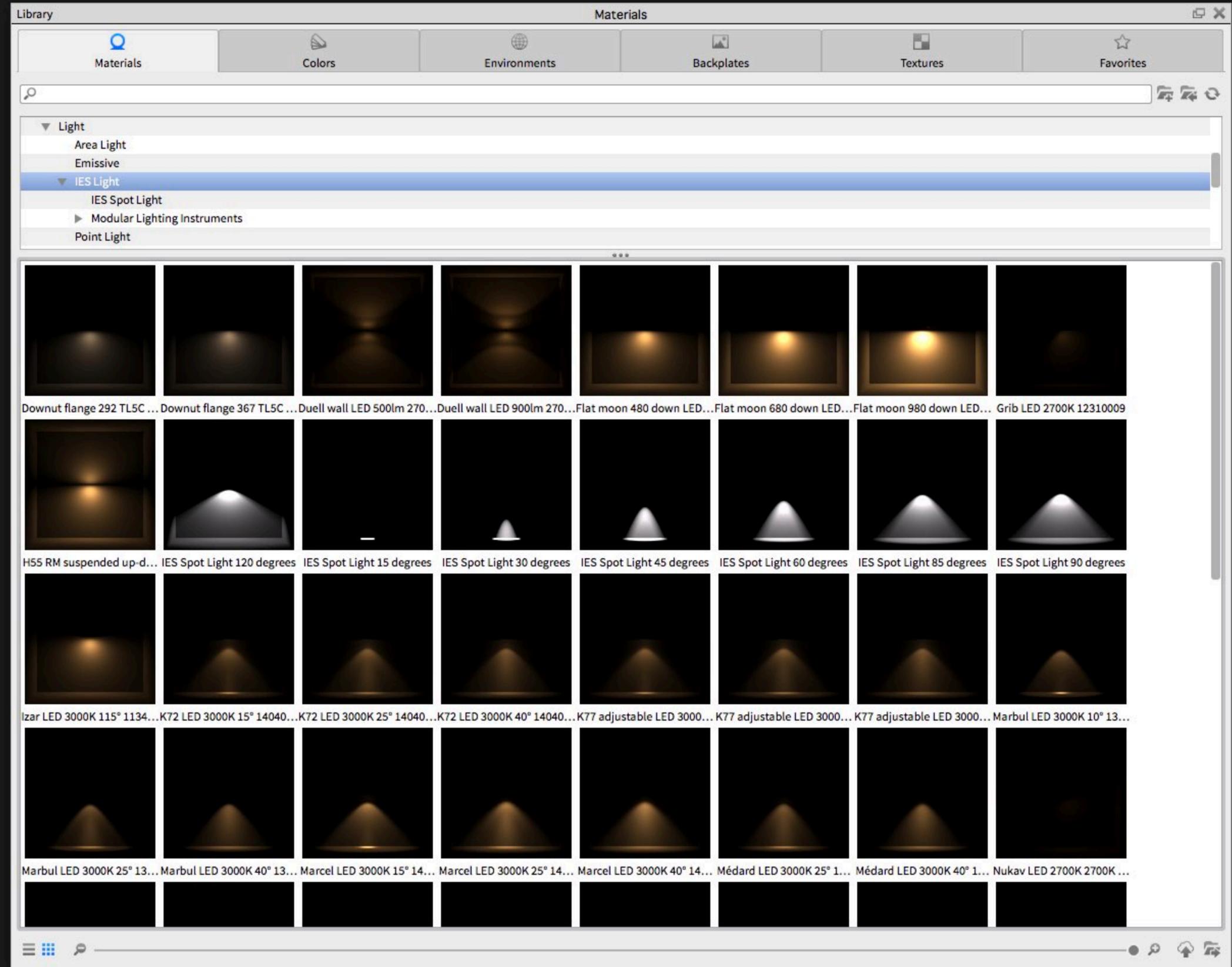


Lights: Spotlights



KeyShot Library

- 60+ IES Lights
- Available through full 6.2.105 Installer (not in update installer)



Adding visible Light Sources

Will be Flat white



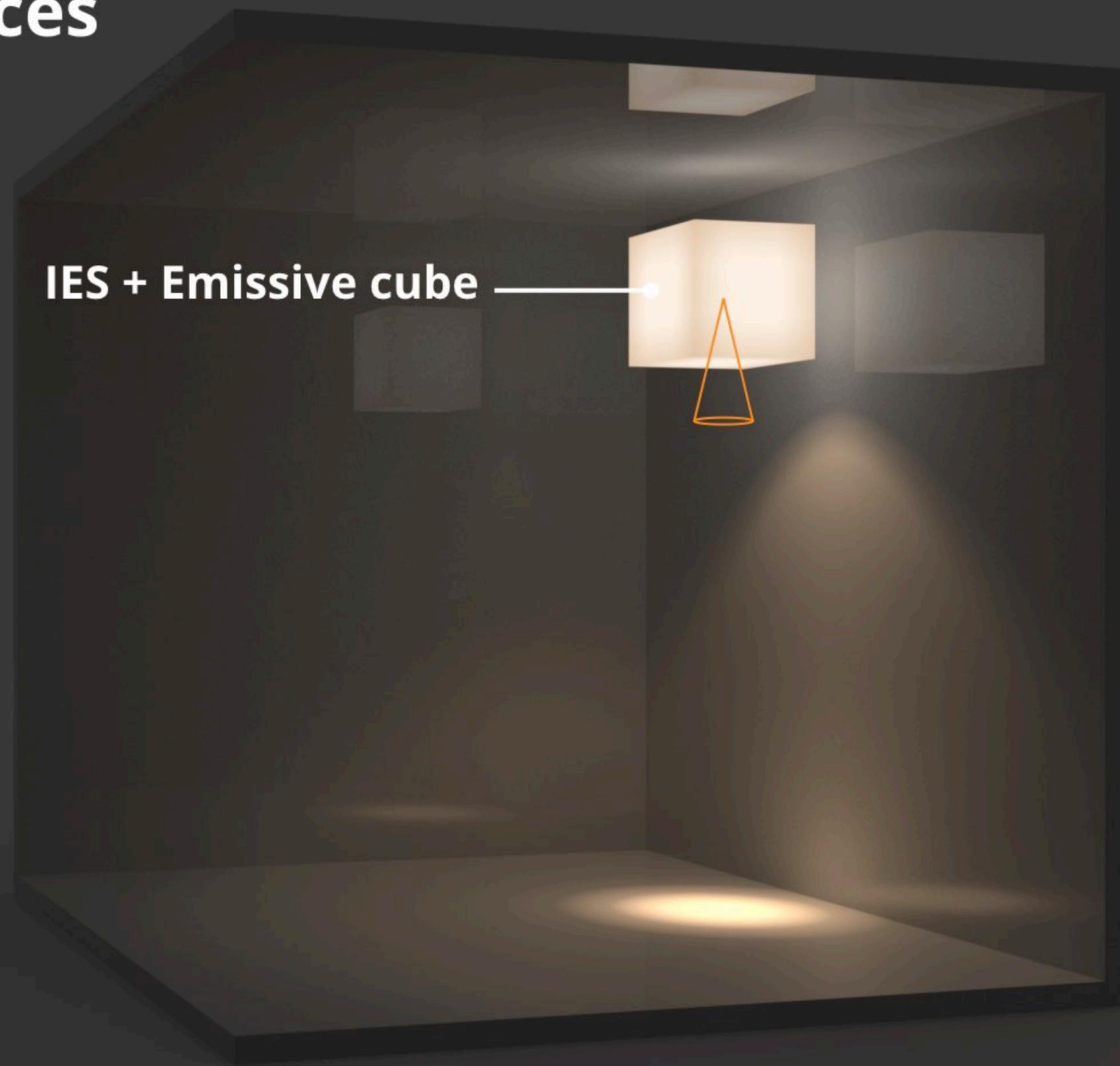
Will be IES Profile



Adding visible Light Sources

- Use Emissive or Flat placeholders

IES + Emissive cube



What about Emissive?

Emissive Material

- Great for TFT Displays, LEDs
- Not intended to light scenes
- Can be textured
- Can be made invisible
- Fast material

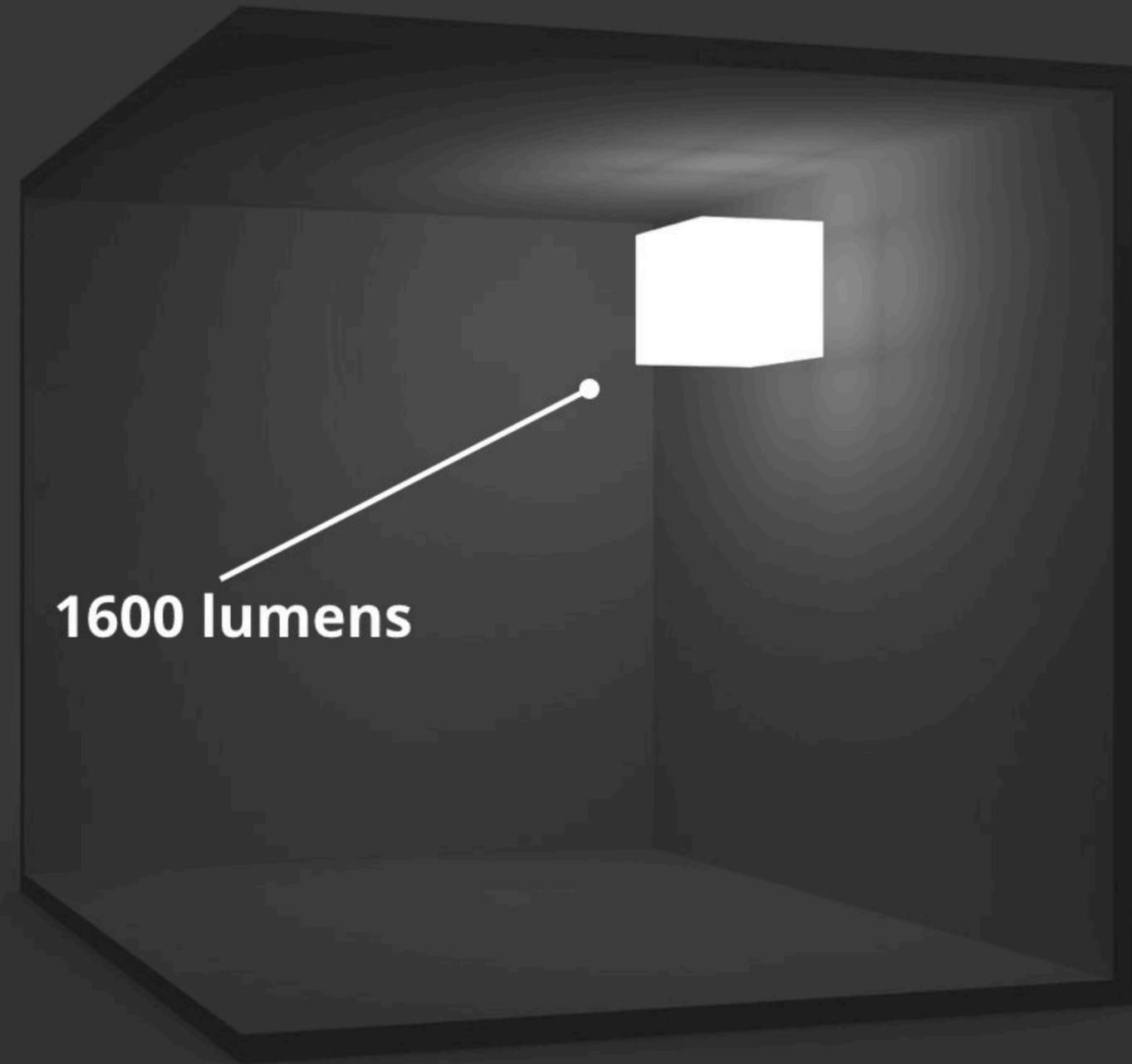
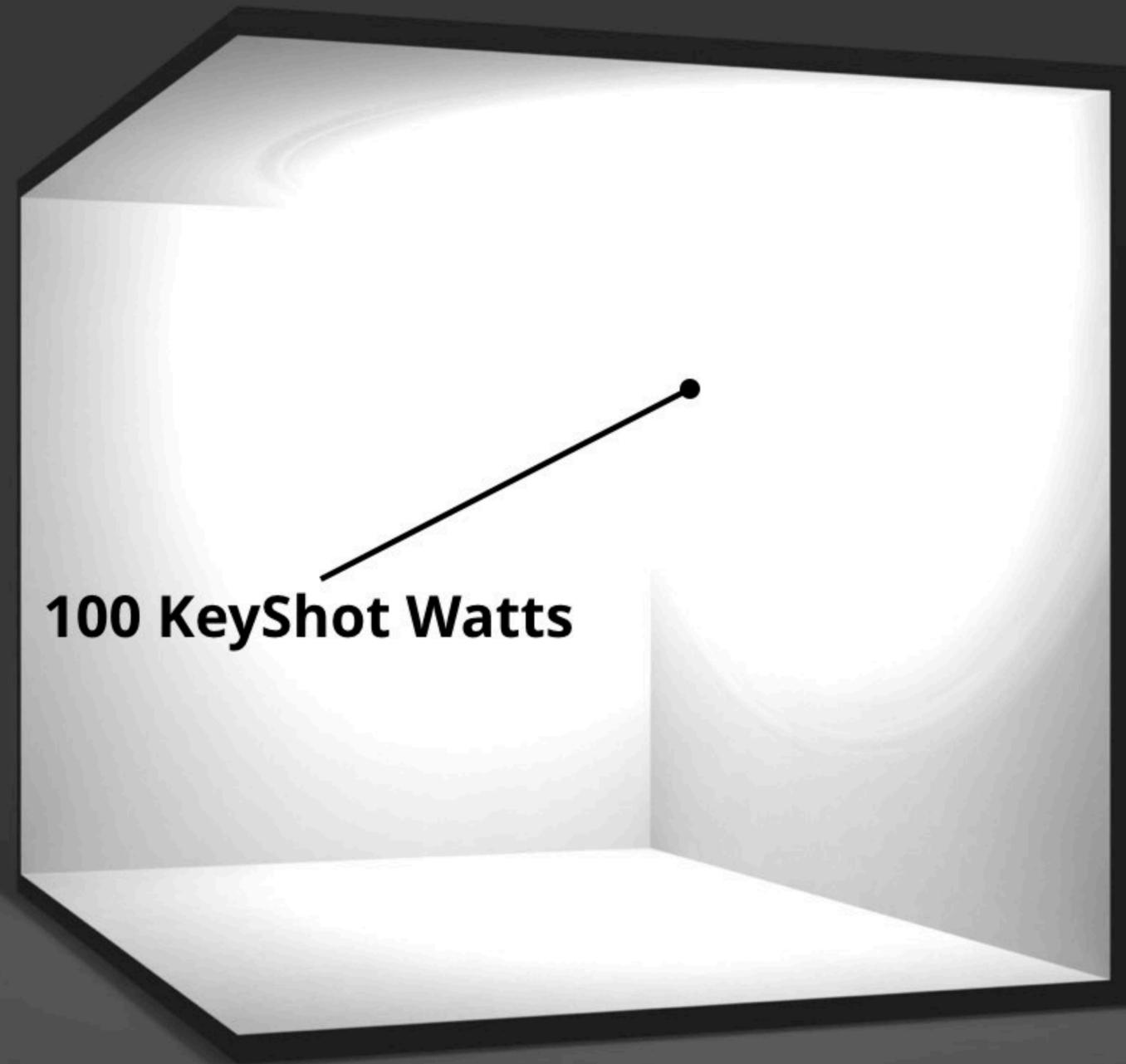


Emissive with Color gradients



**Why am I getting
white dots?**

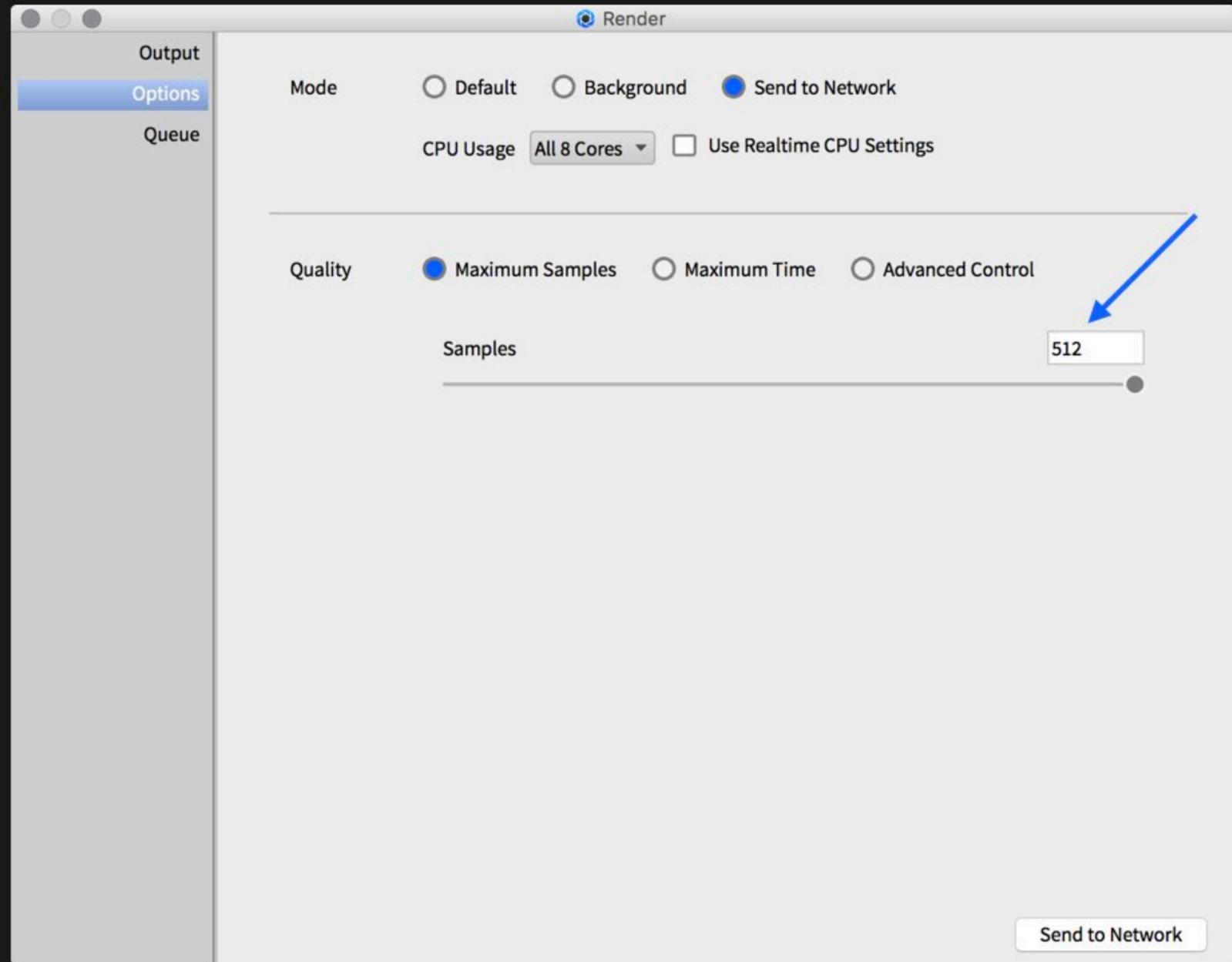
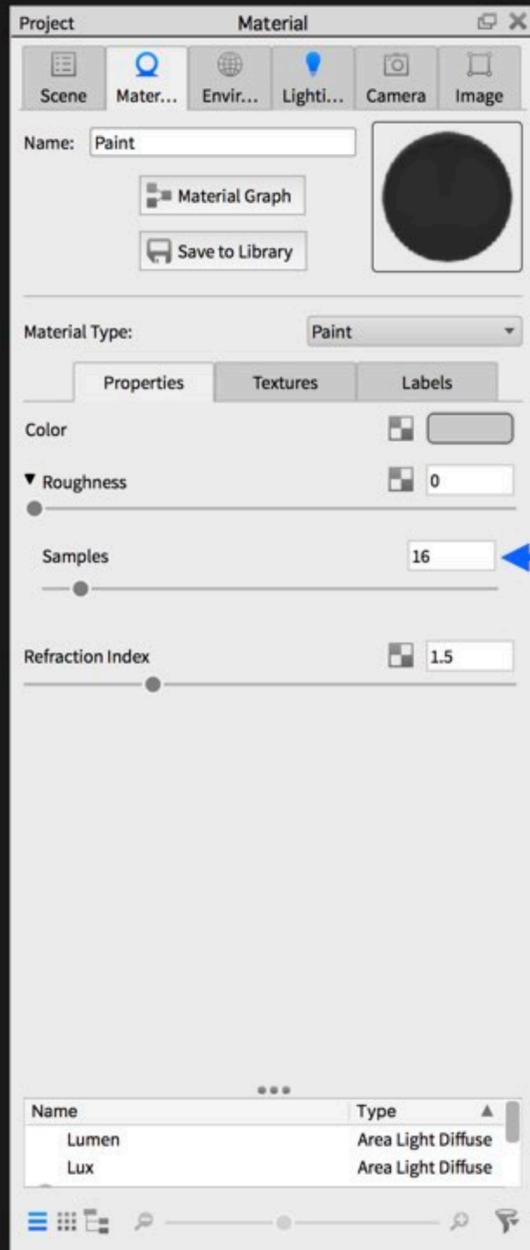
**Use lumens or lux instead of watts.
(KeyShot watts measure radiant flux)**





**Use interior mode for complex lighting scenarios
(not Indirect Bounces)**

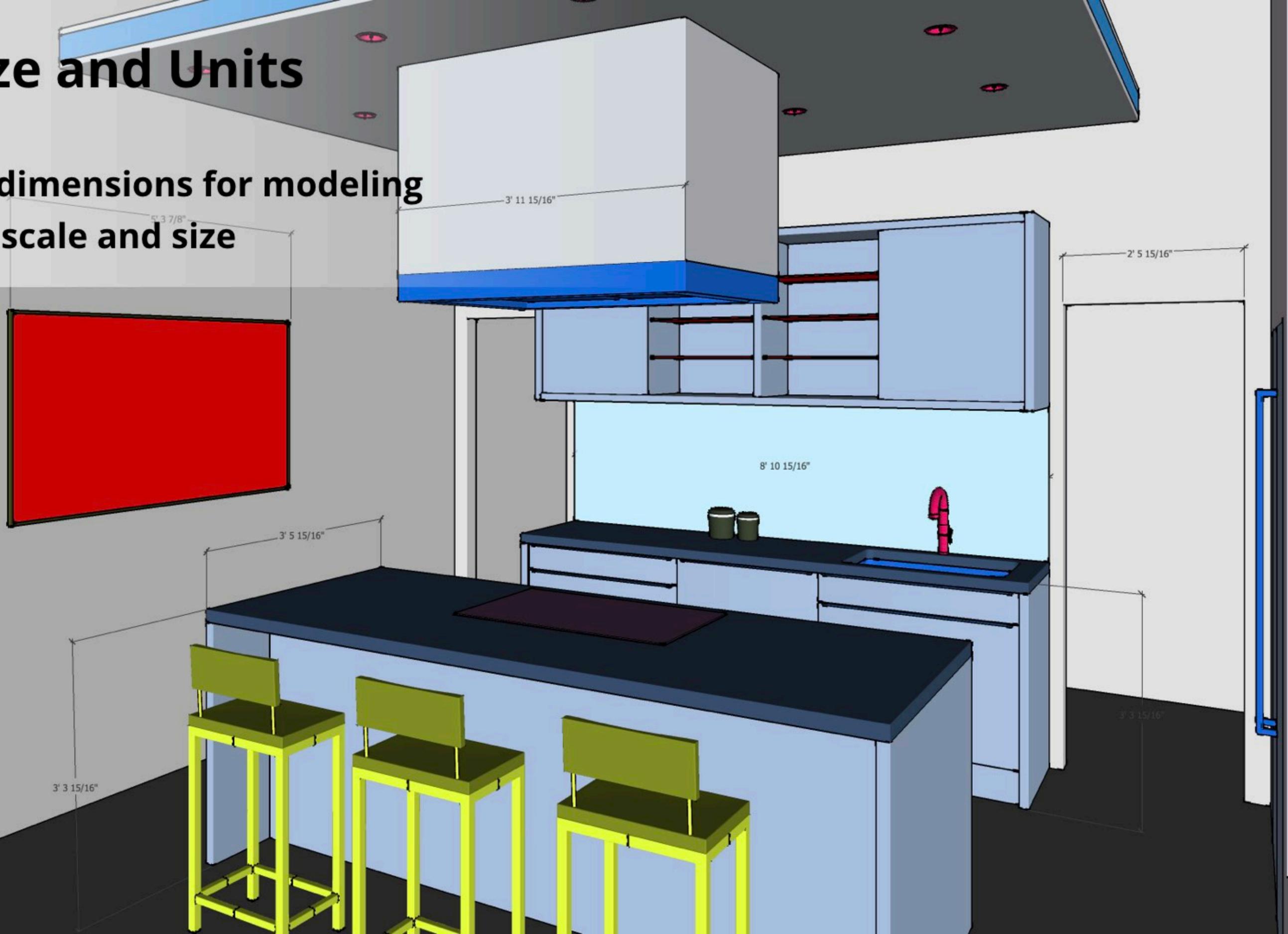
Increase Material or Render Samples

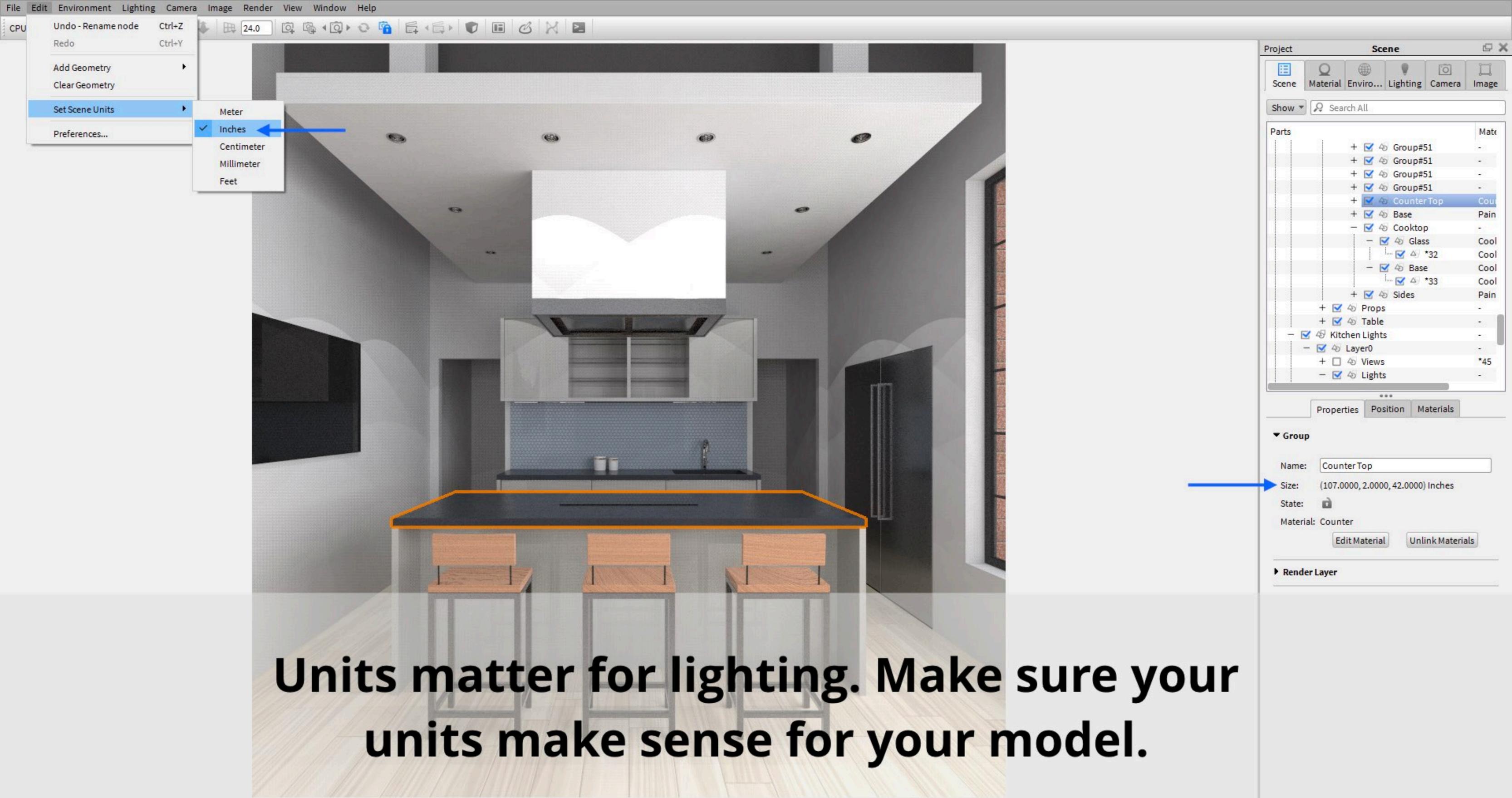


Tips for Interiors

Real Size and Units

- Use real dimensions for modeling
- Realistic scale and size





Units matter for lighting. Make sure your units make sense for your model.

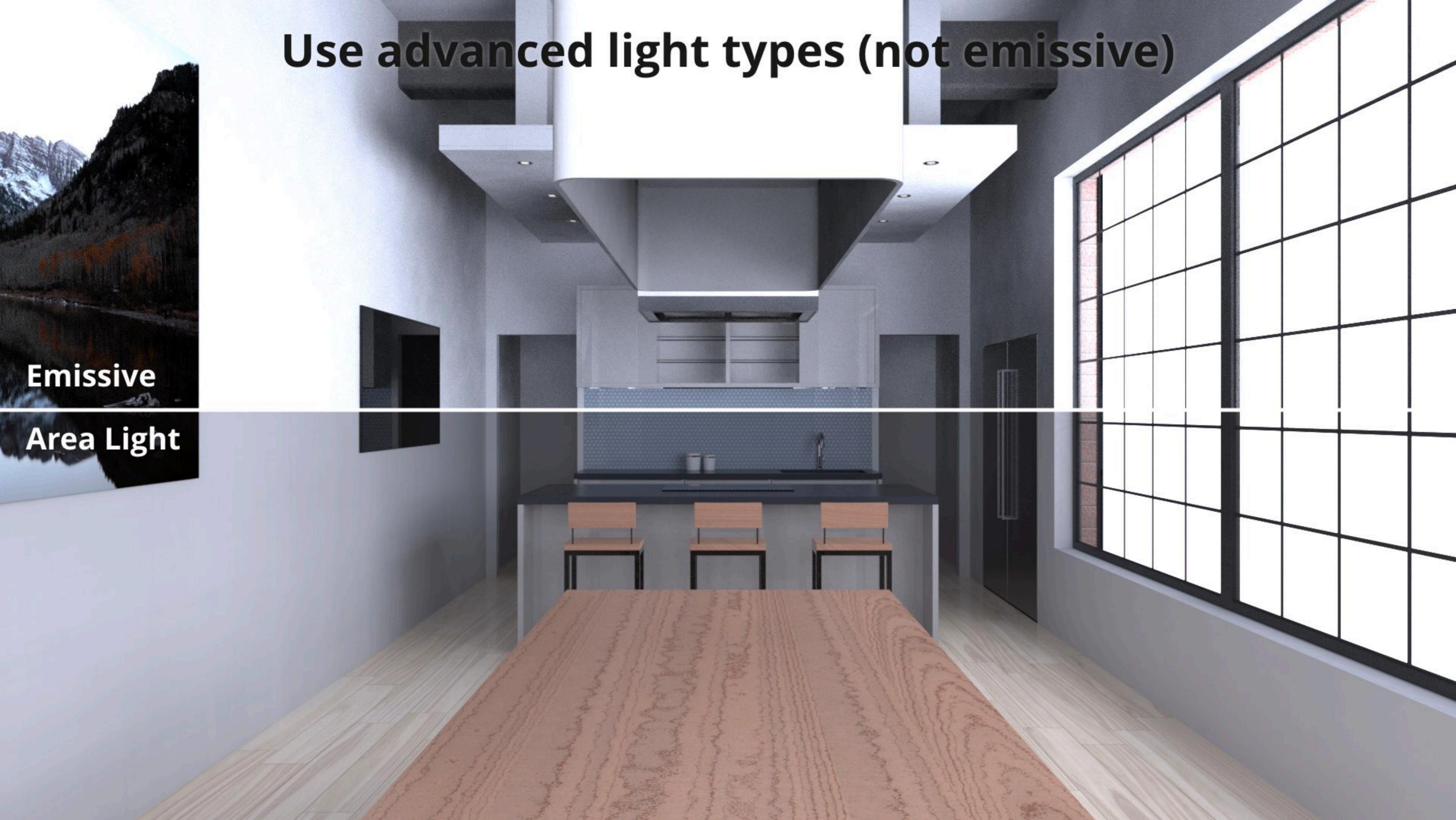
Use Multiple light sources



Use advanced light types (not emissive)

Emissive

Area Light



Fully enclose your scene



Don't hide walls and the ceiling



Don't hide walls and the ceiling



Simple geometry over complex

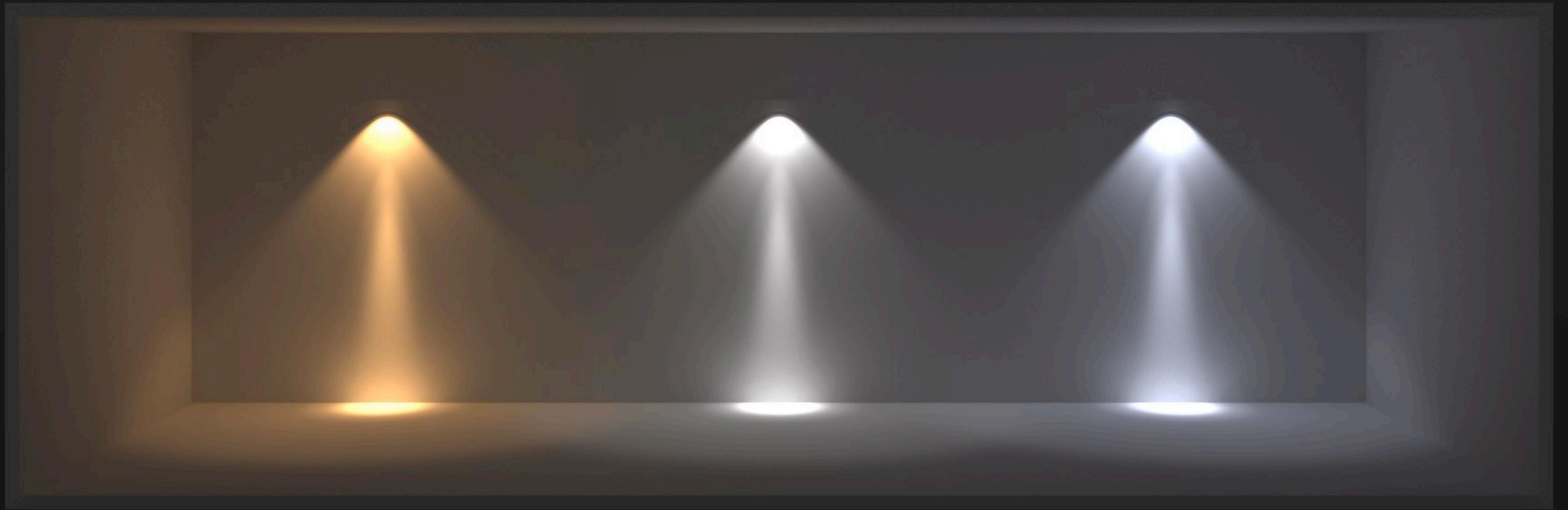


Color Temperature

Warm

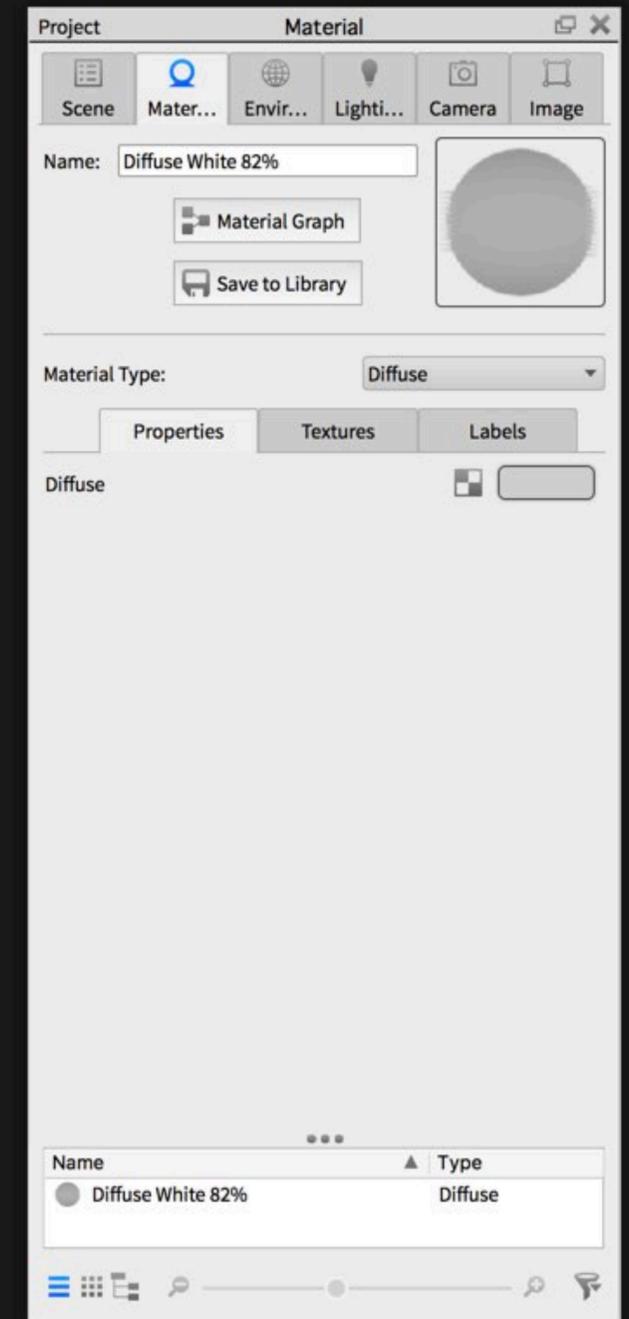
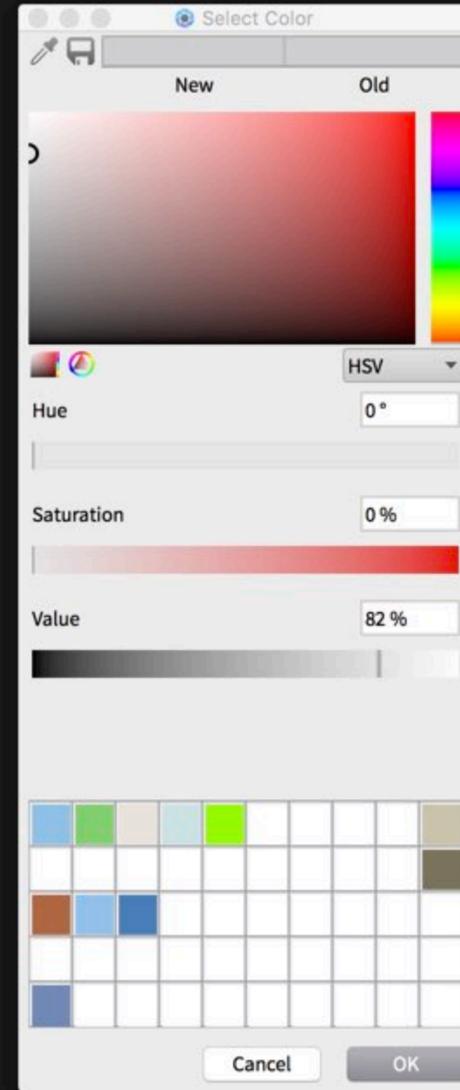
Neutral

Cool



No Pure White for Materials

- True white doesn't exist in real life
- Set brightest materials to 82% gray



Use Shift Lens



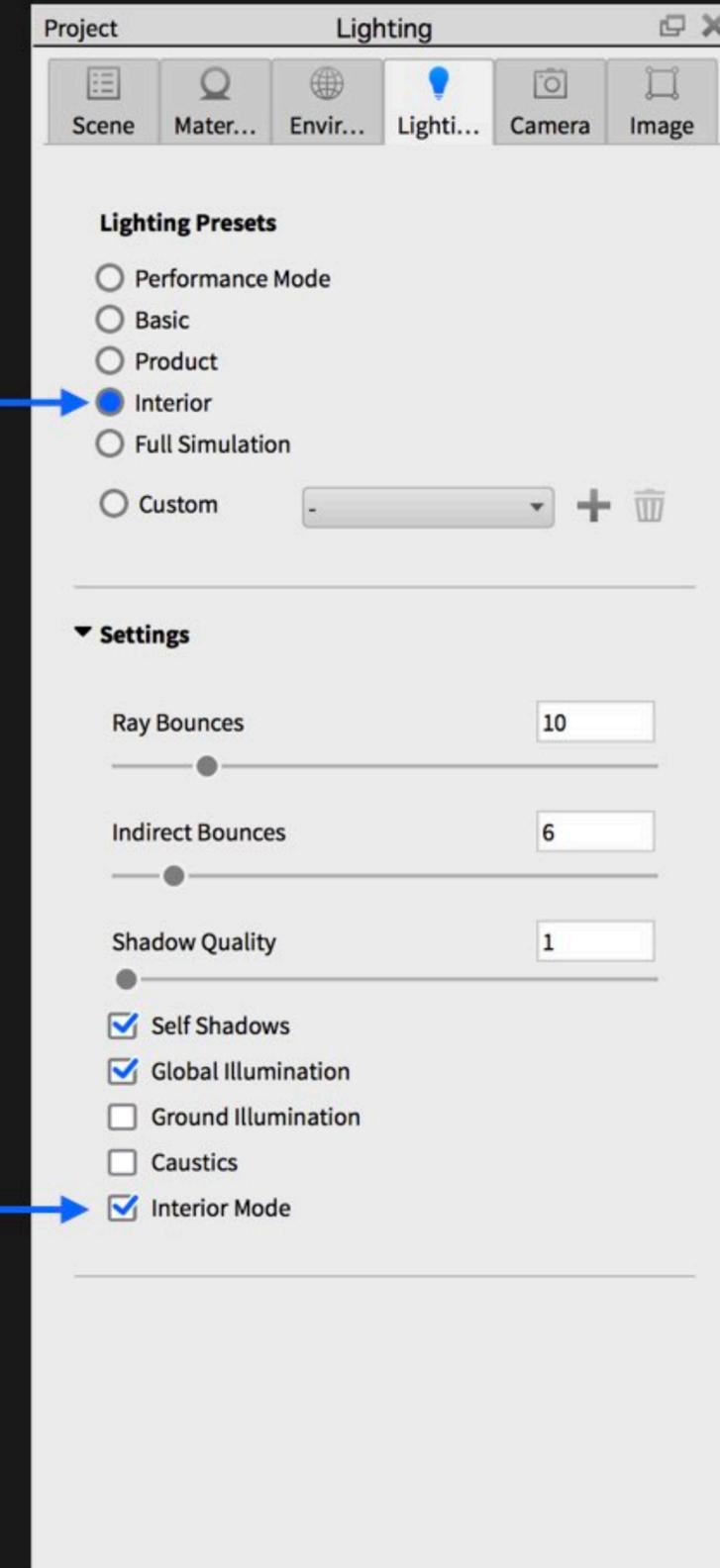
Regular Perspective Lens



Shift Lens

Use Interior Mode

- Optimized for complex lighting scenarios
- Noise suppression algorithm built in
- Increase Ray Bounces for more light
- Increase Shadow Quality to 2 or 3



Resources:

- keyshot.com/scenes
- keyshot.com/forum

The screenshot shows a web browser window with the URL www.keyshot.com/resources/downloads/scenes/. The page features a grid of 3D scene resources, each with a title, author, a thumbnail image, and a 'DOWNLOAD' button. At the top, there are navigation buttons for 'PART 1', 'PART 2', 'VERSION 1', and 'VERSION 2'.

Resource Name	Author	Thumbnail Description
Binoculars	by Luxion	A pair of black binoculars with orange lenses on a dark surface.
Contemporary Bathroom	by Luxion	A modern bathroom interior with a bathtub, sink, and large windows.
Eternity Ring	by Luxion	A diamond and red gemstone eternity ring.
Bathroom Interior	by Tim Feher/Luxion	A bathroom interior with a bathtub, a window with a view of greenery, and a checkered floor.
Stool	by Esben Oxholm	A wooden stool with a metal base on a white background.
Watch	by Esben Oxholm	A silver watch with a black leather strap on a dark surface.
Tablet & Stylus	by Luxion	A tablet computer and a stylus on a white surface.
KeyShot Camera	by Luxion	A KeyShot camera lens and body on a wooden surface.
Studio Lights	by Luxion	A professional studio light fixture on a dark background.

Questions?

Thank you for watching!

keyshot.com/learning