

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



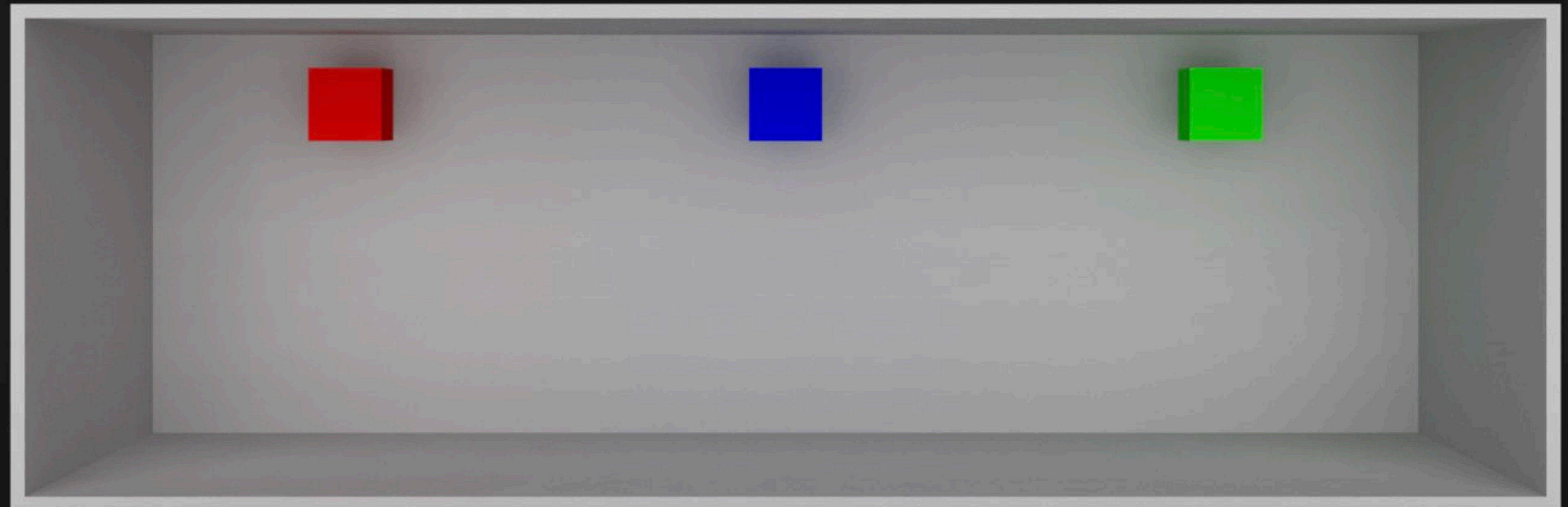
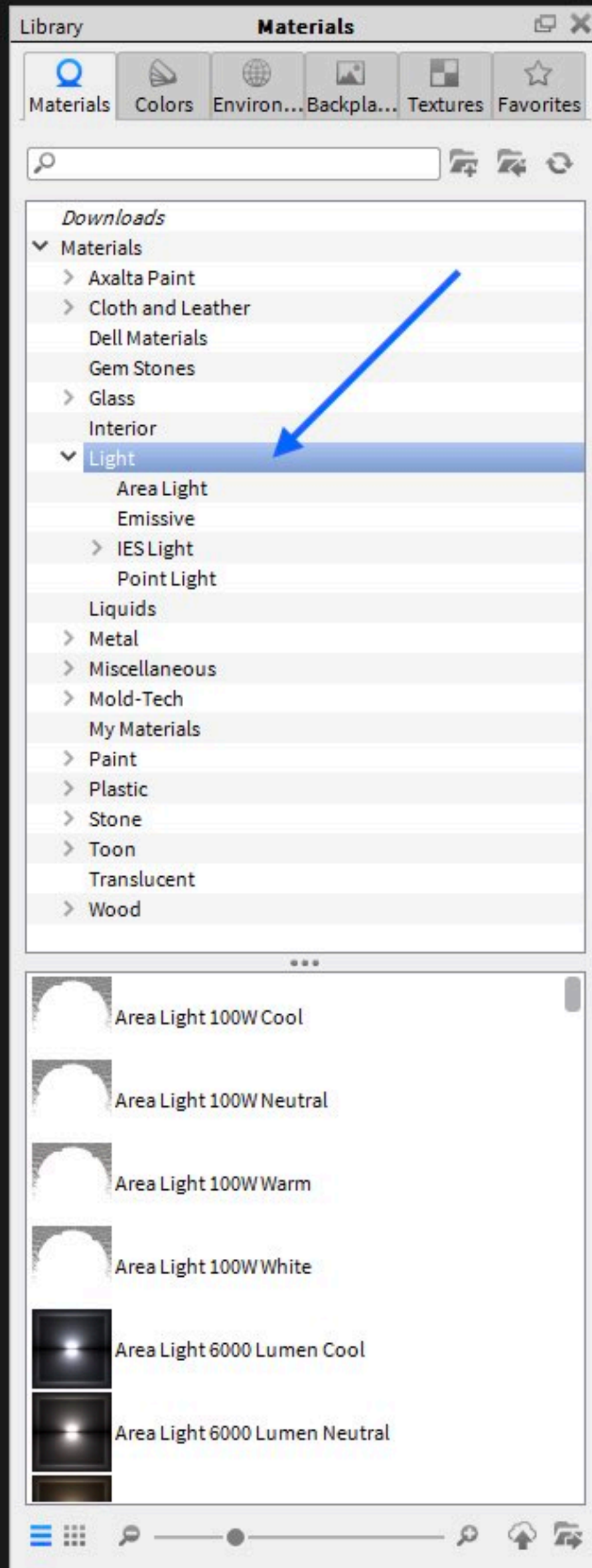
Computer Specs

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

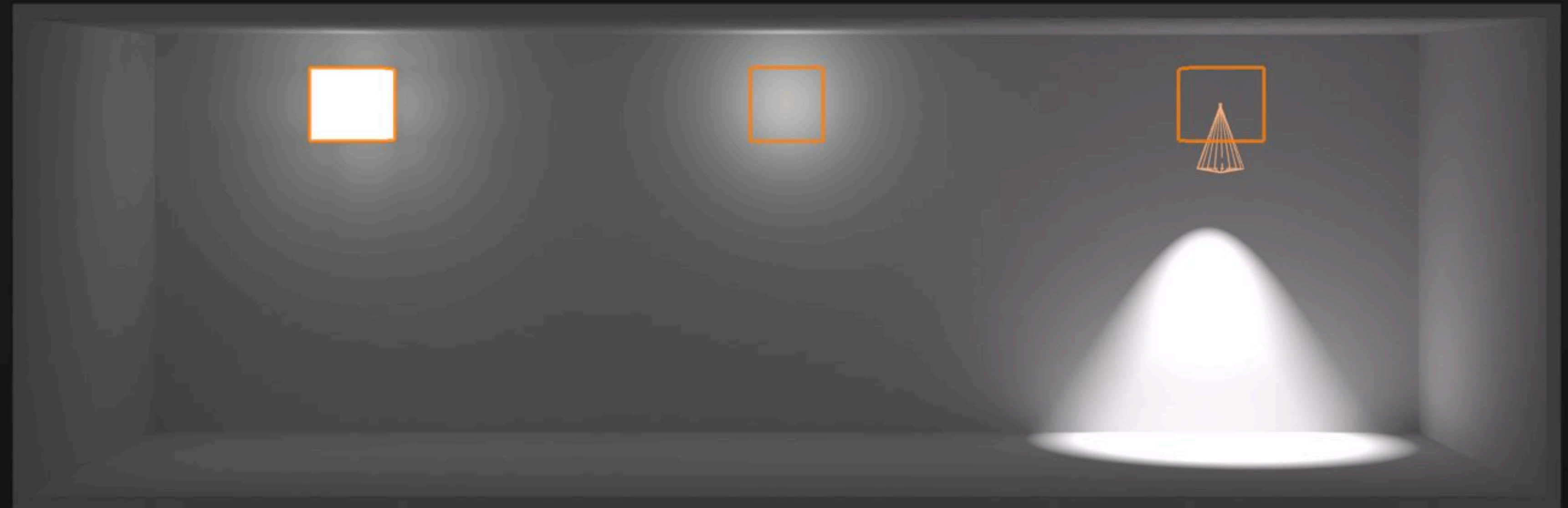
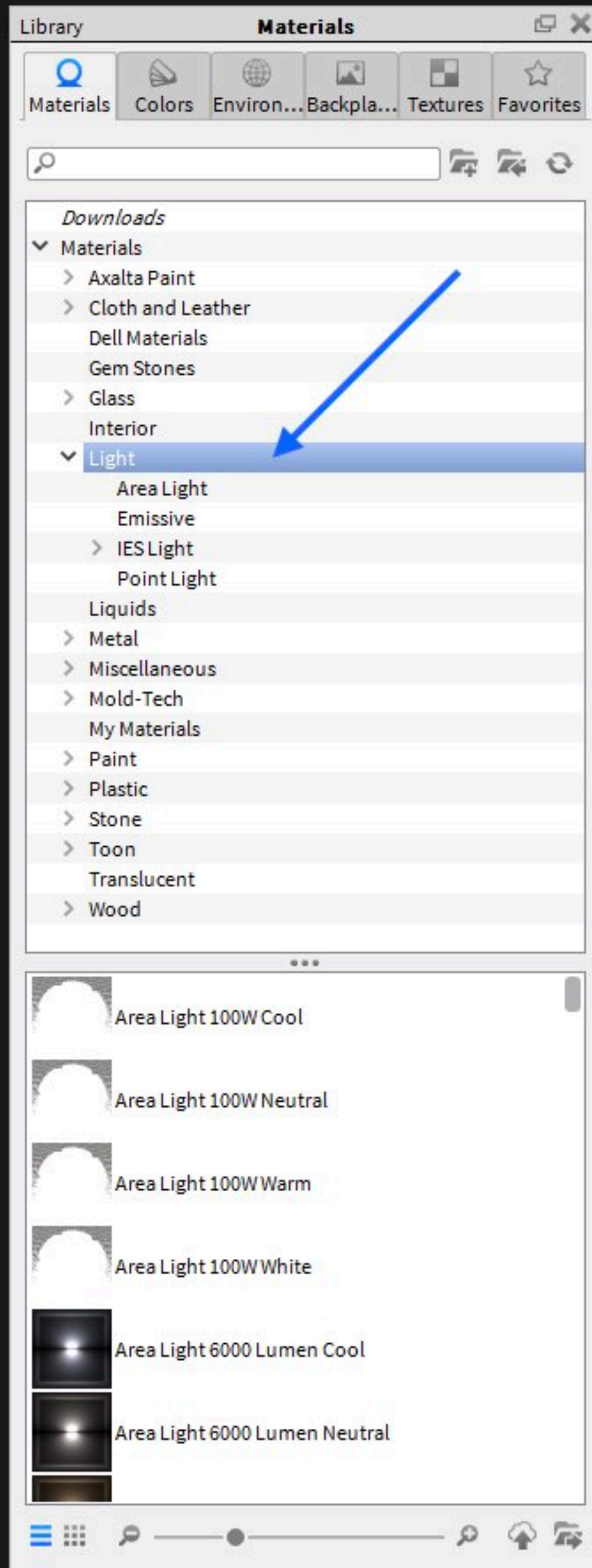


**Is it possible to add
lights in KeyShot?**

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



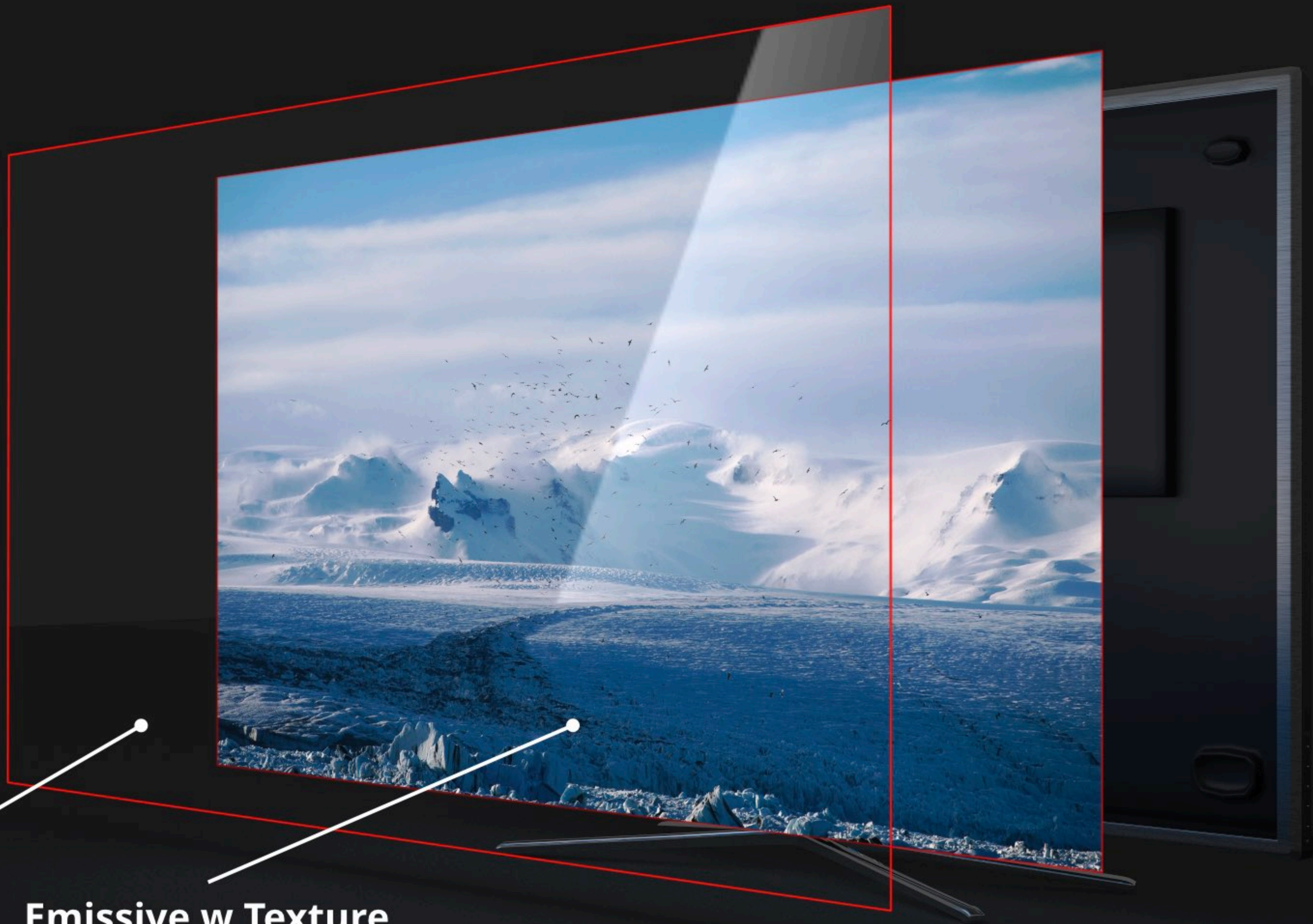
Point Light





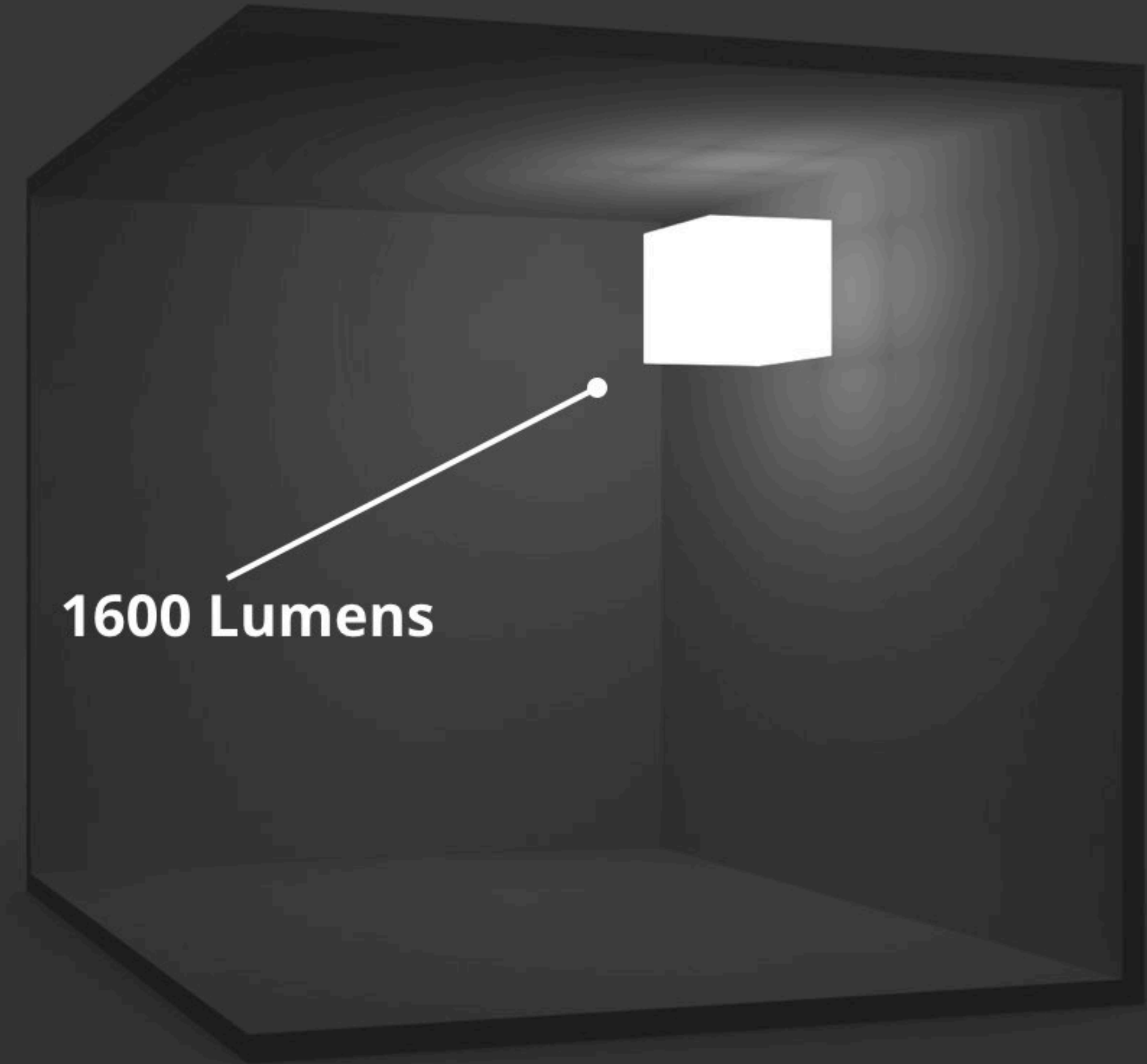
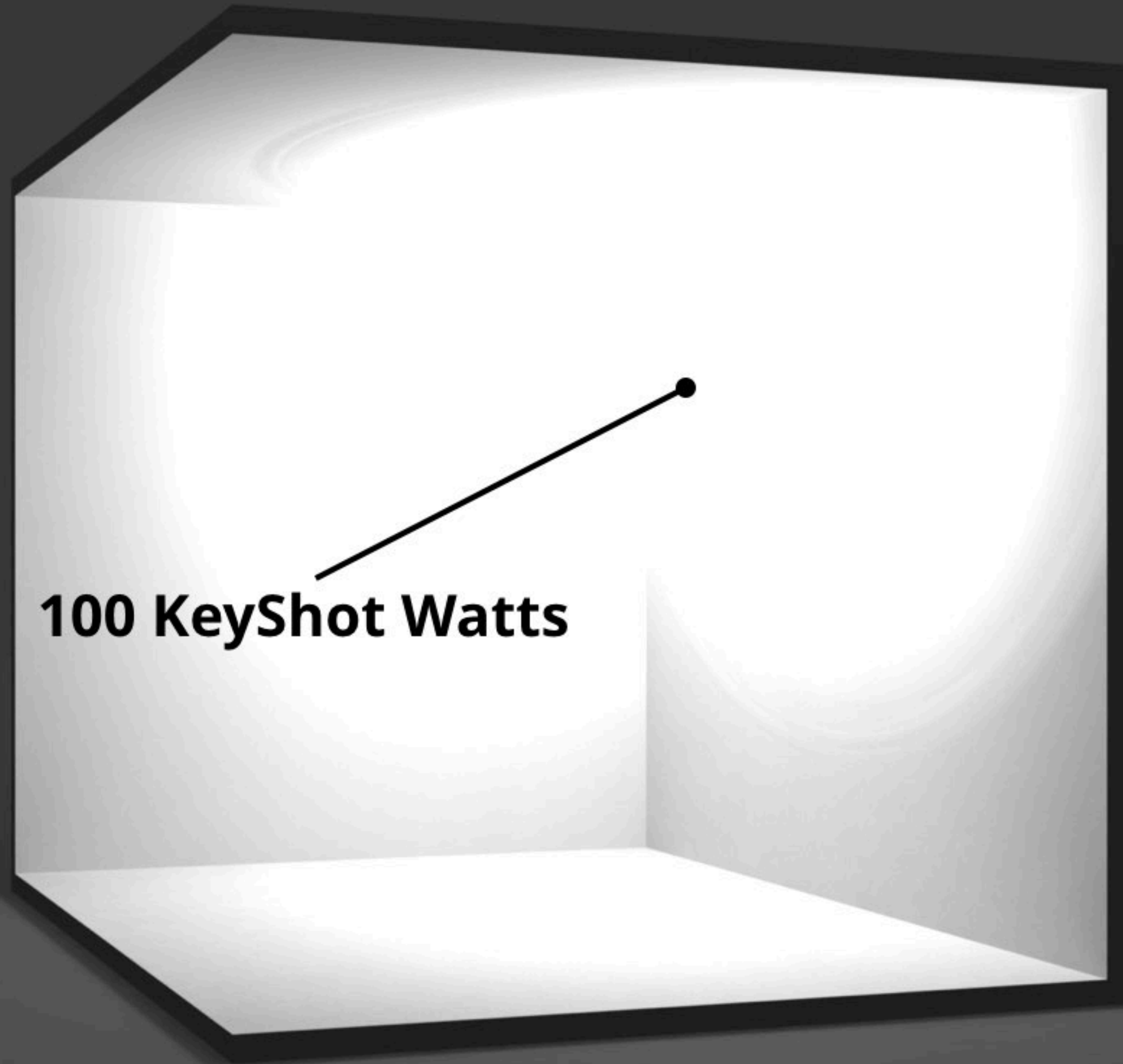
Glass

Emissive w Texture



Physical Light Types

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



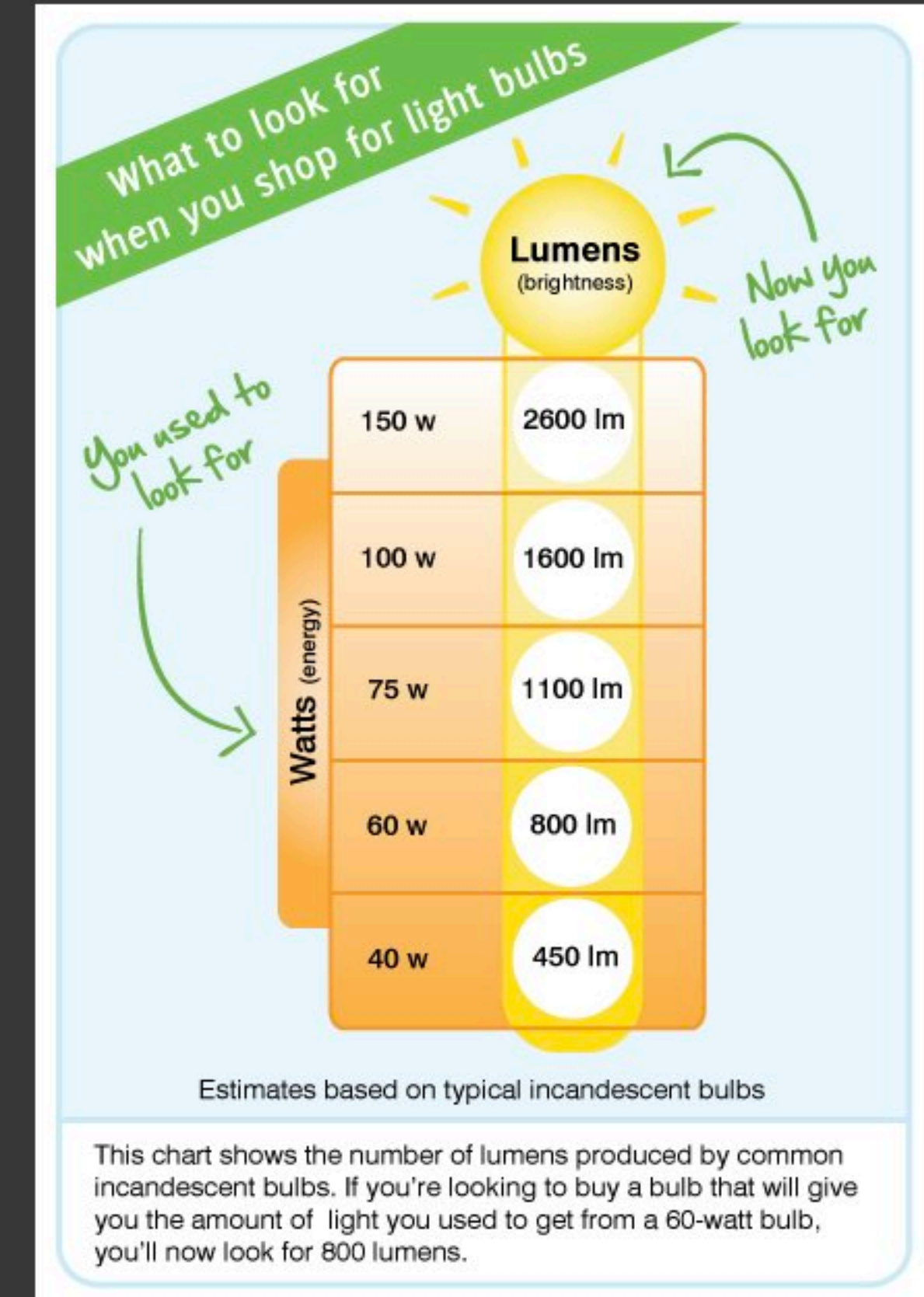
100 KeyShot Watts = approx. 6830 lumen
Watts measure radiant flux



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**

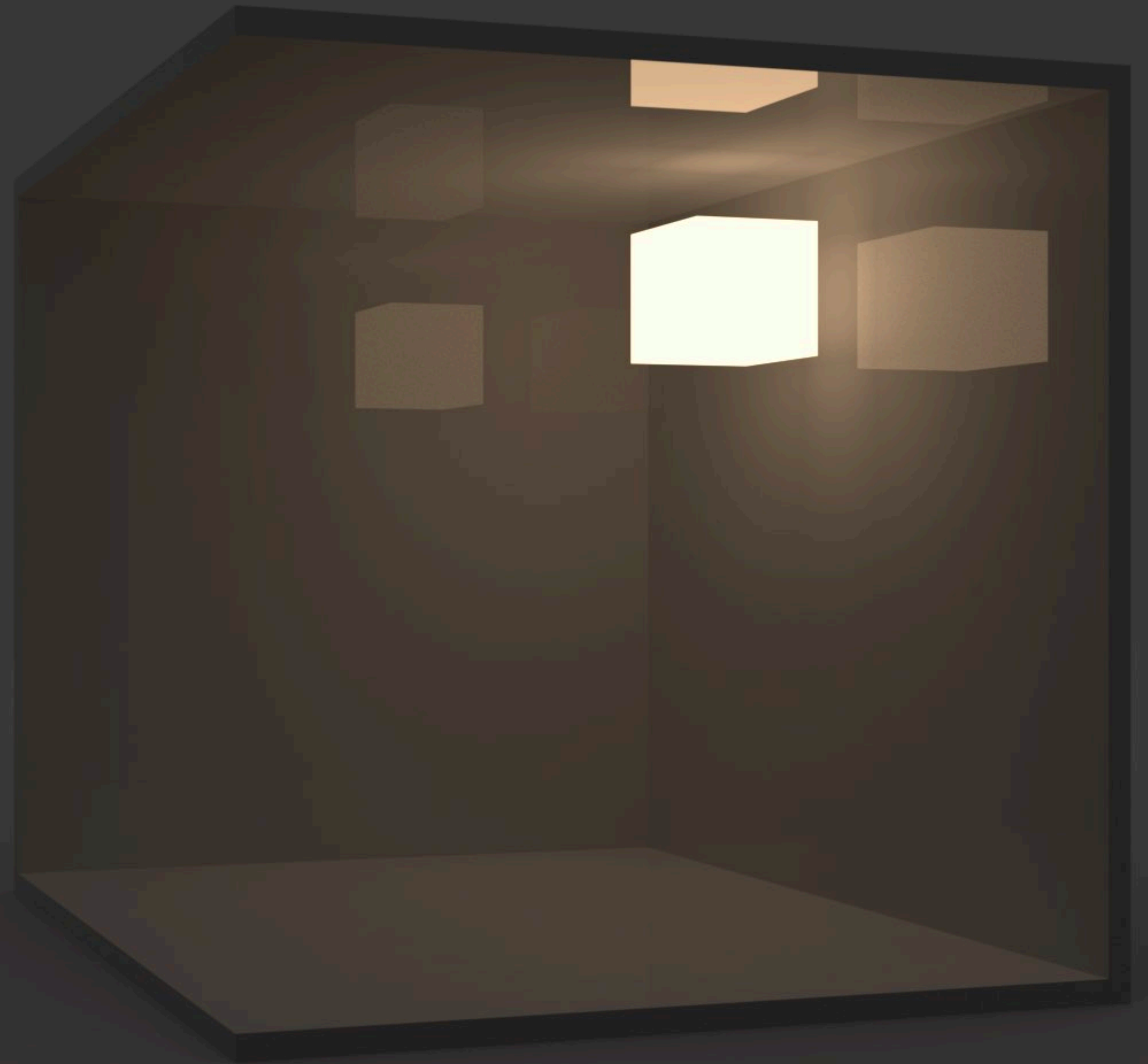
**Point Light
Diffuse**

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





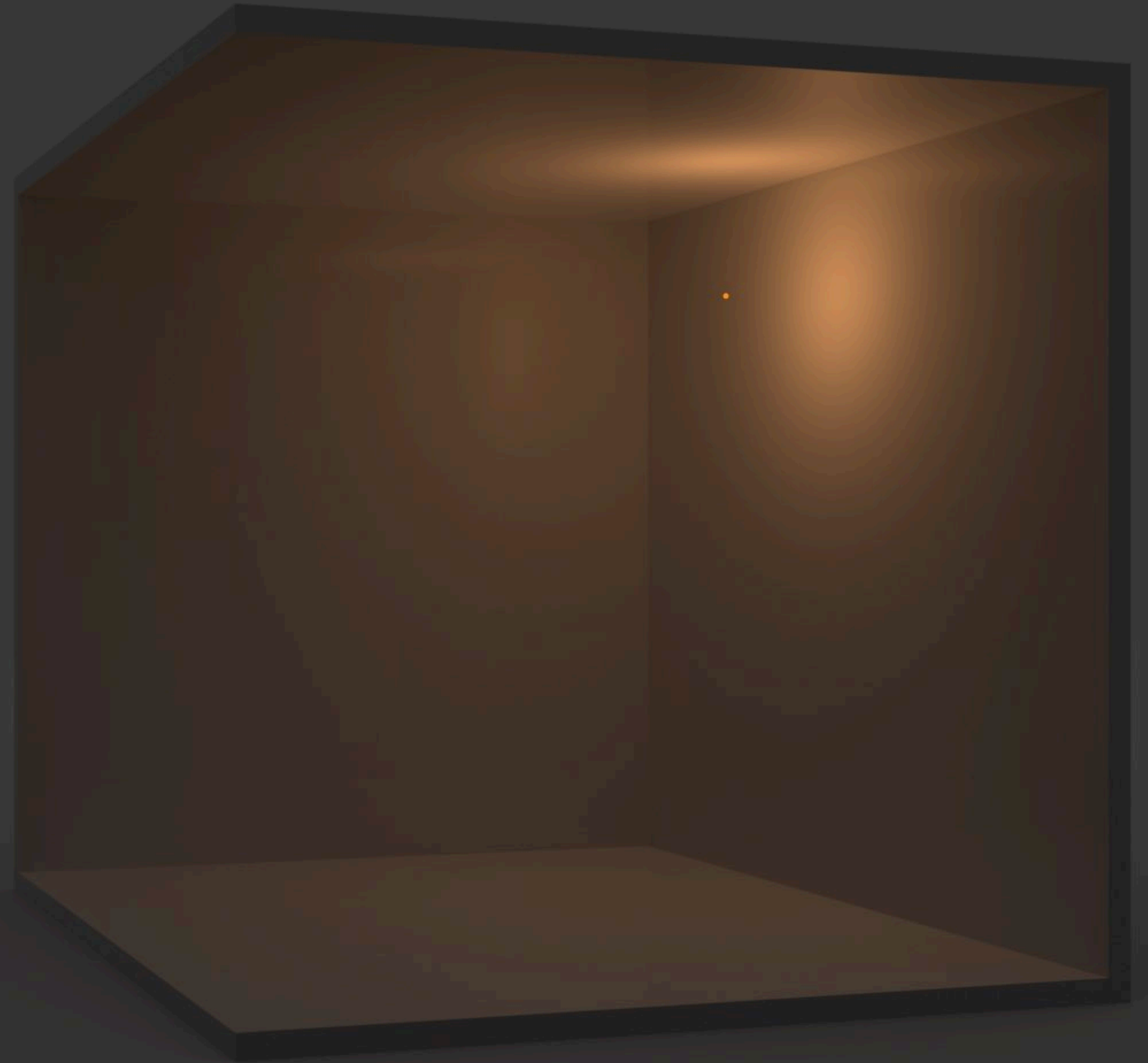
Lights: Hood, Shelves, Backsplash, Ceiling



Lights: Windows

Point Light Diffuse

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

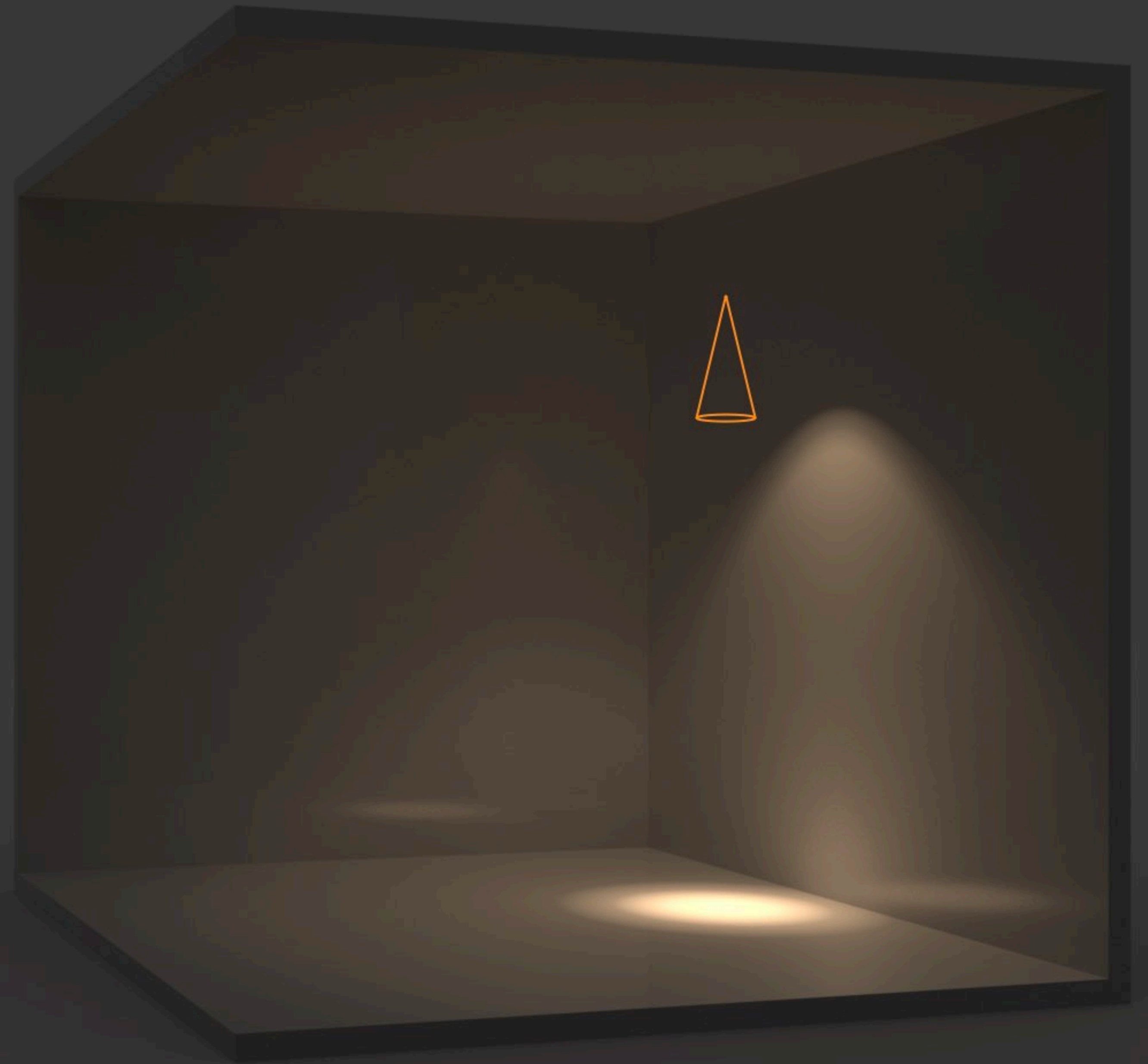




Lights: Spotlights

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

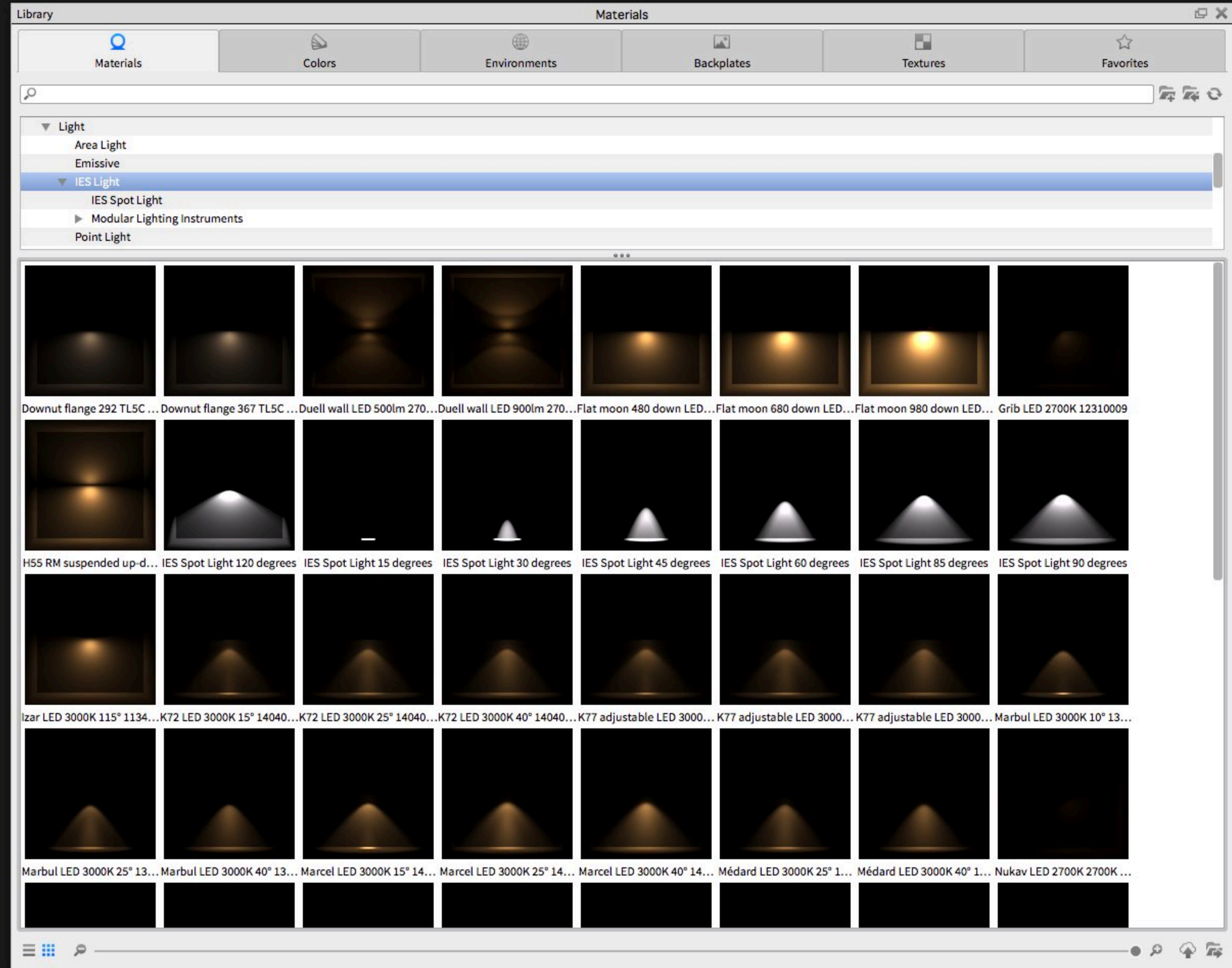




Lights: Spotlights

KeyShot Library

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



Adding visible Light Sources

Will be Flat white



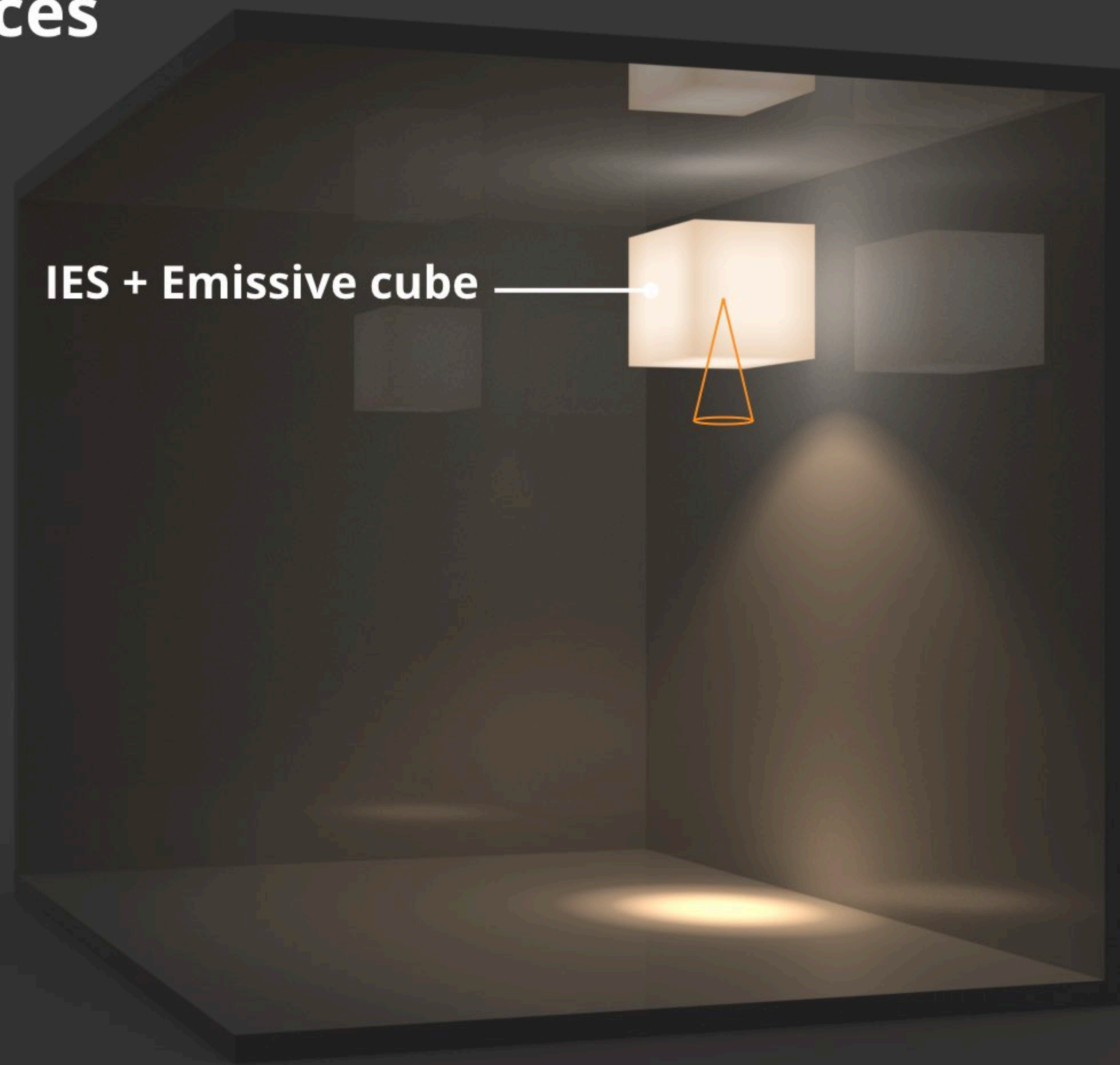
Will be IES Profile



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

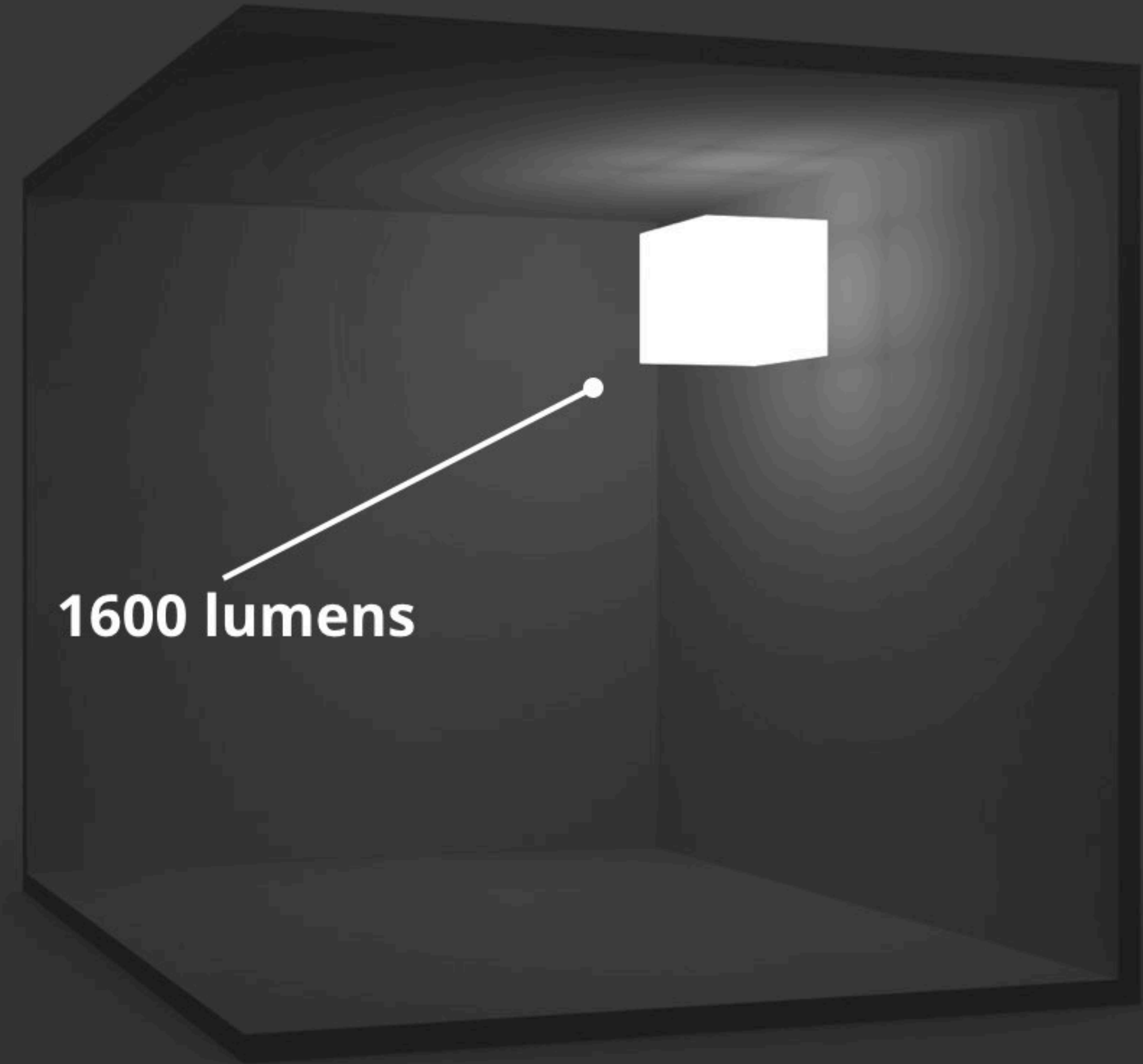
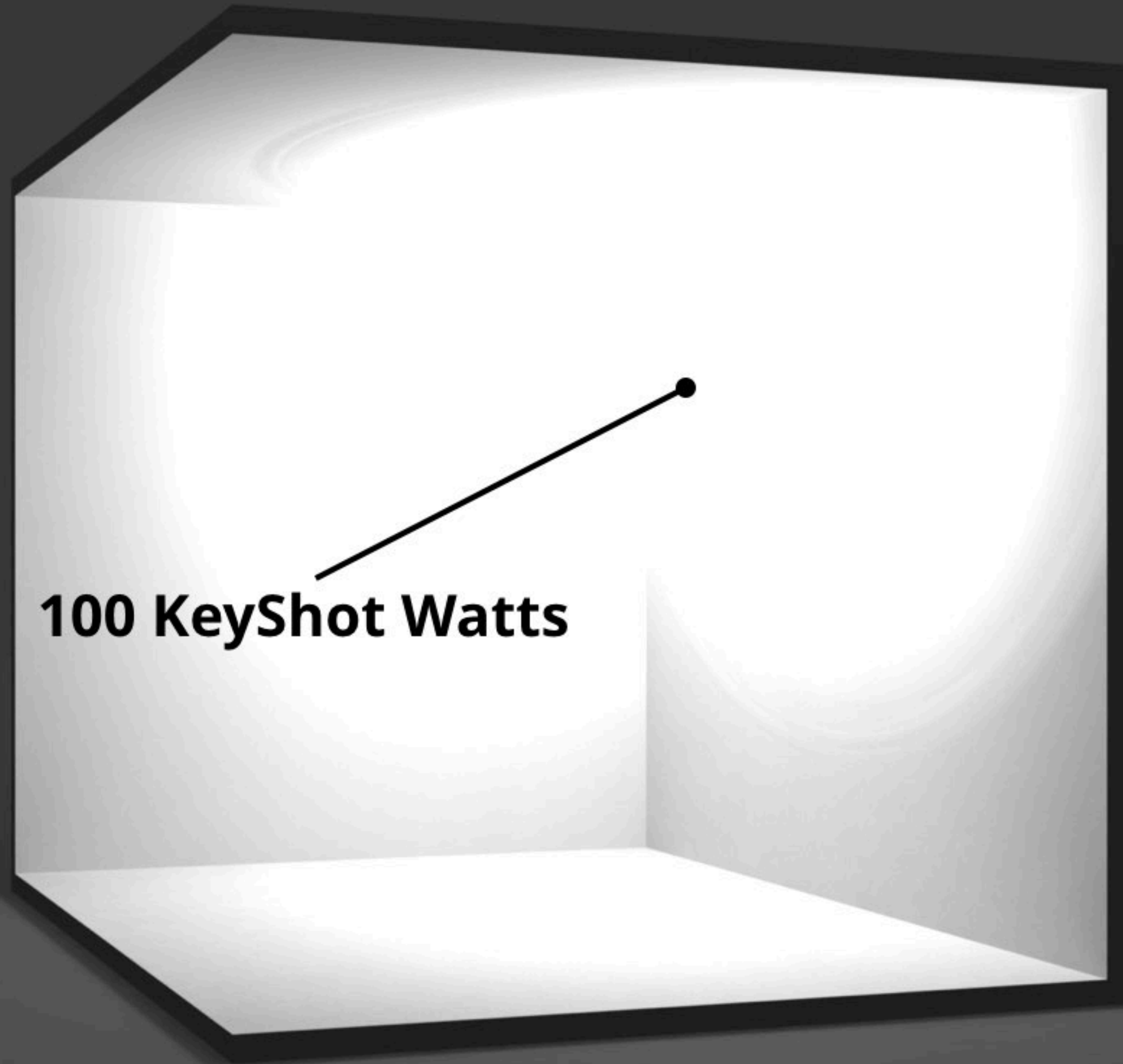


Emissive with Color gradients



**Why am I getting
white dots?**

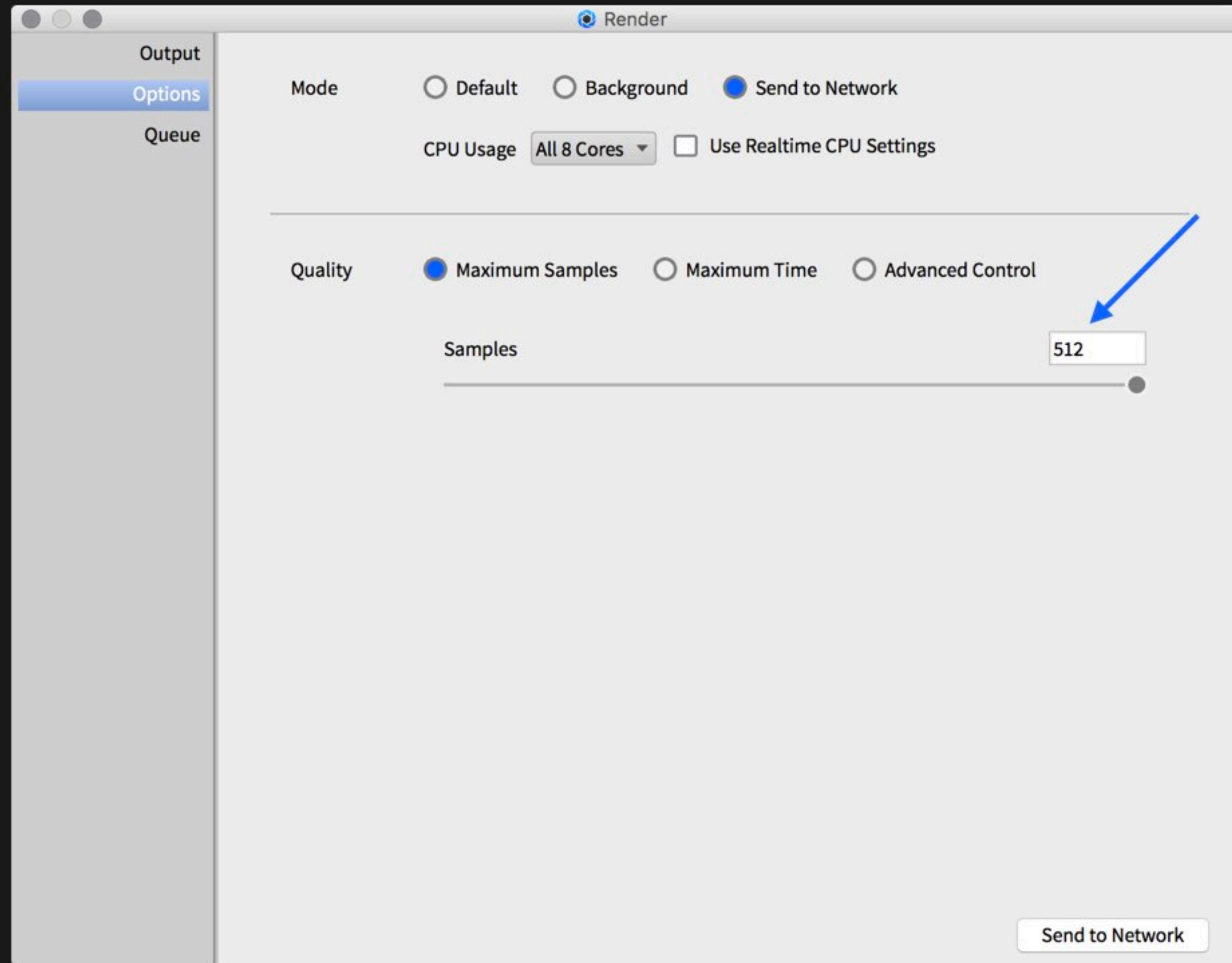
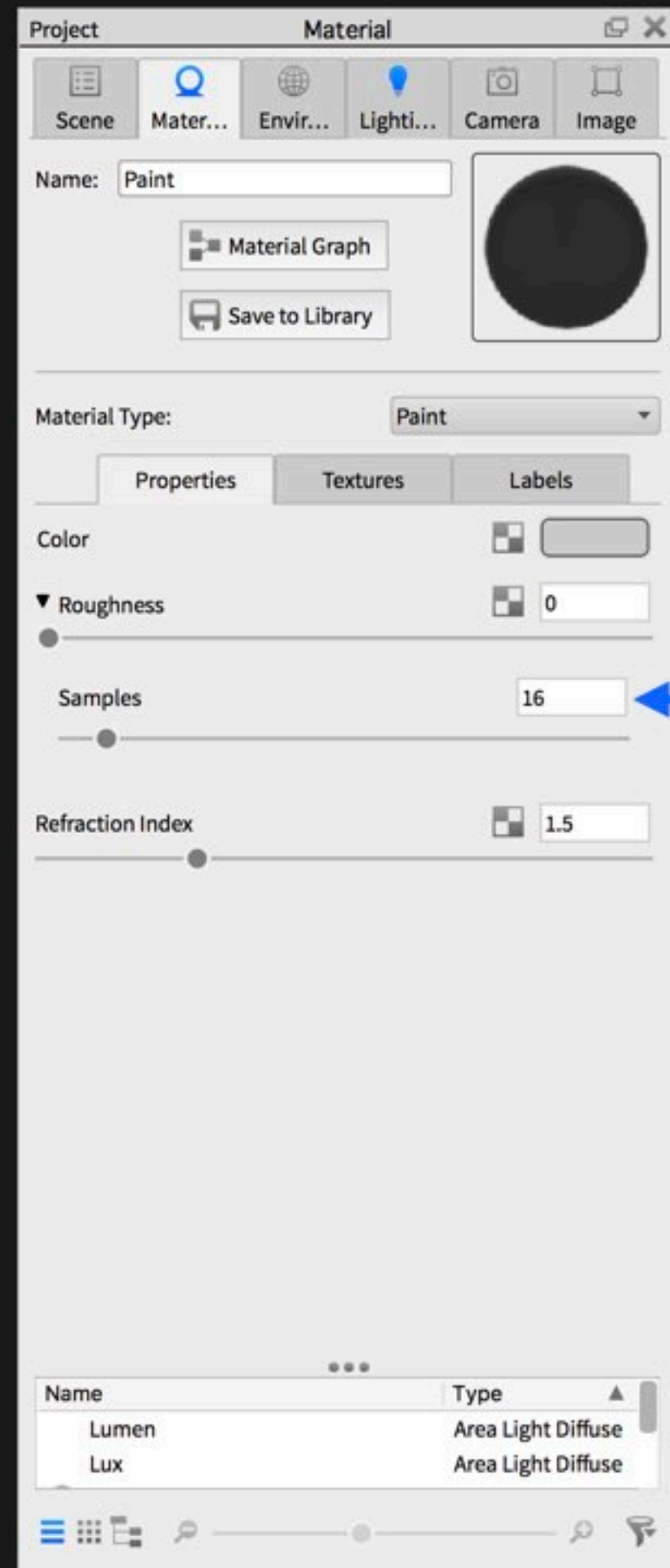
**Use lumens or lux instead of watts.
(KeyShot watts measure radiant flux)**





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

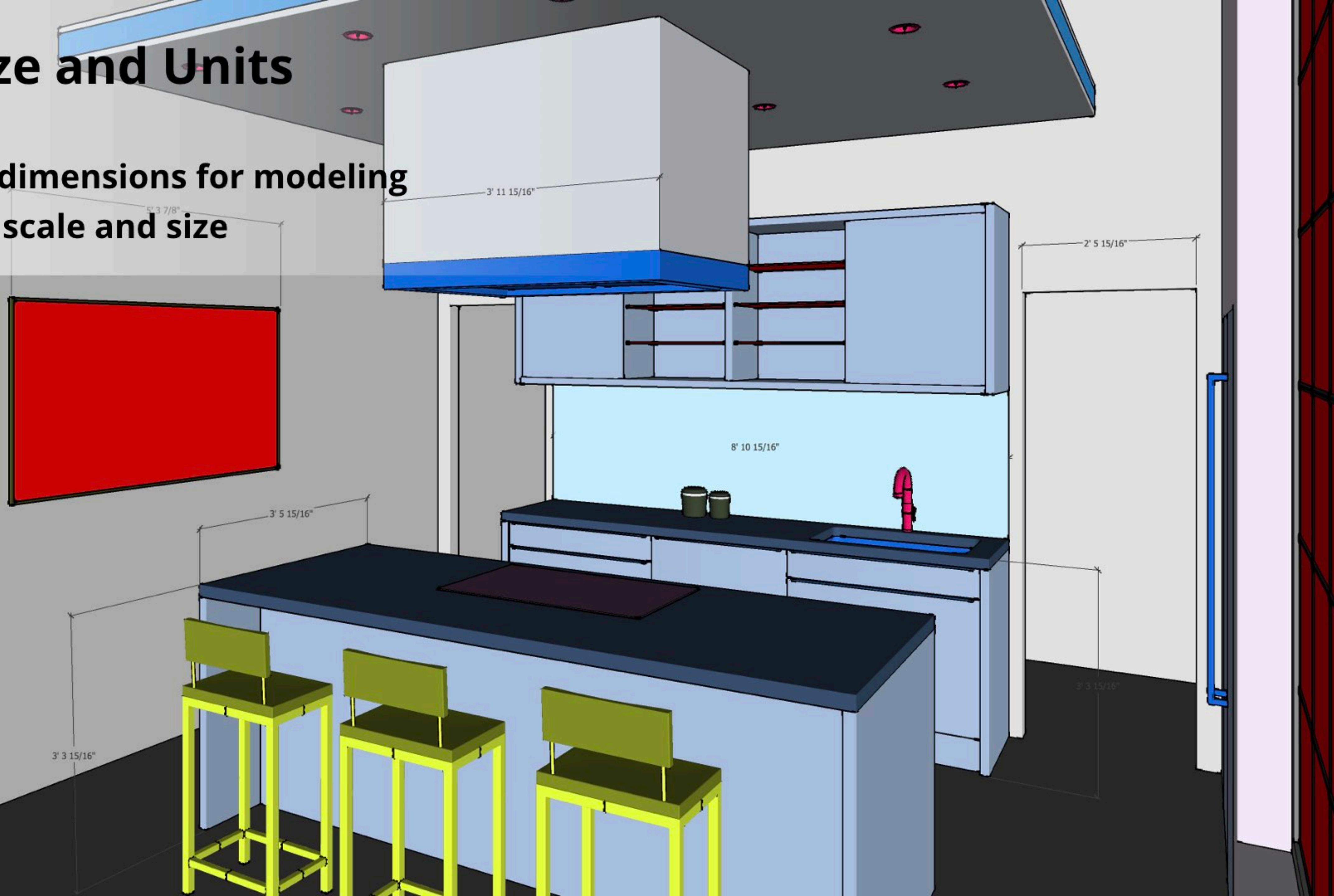
Increase Material or Render Samples

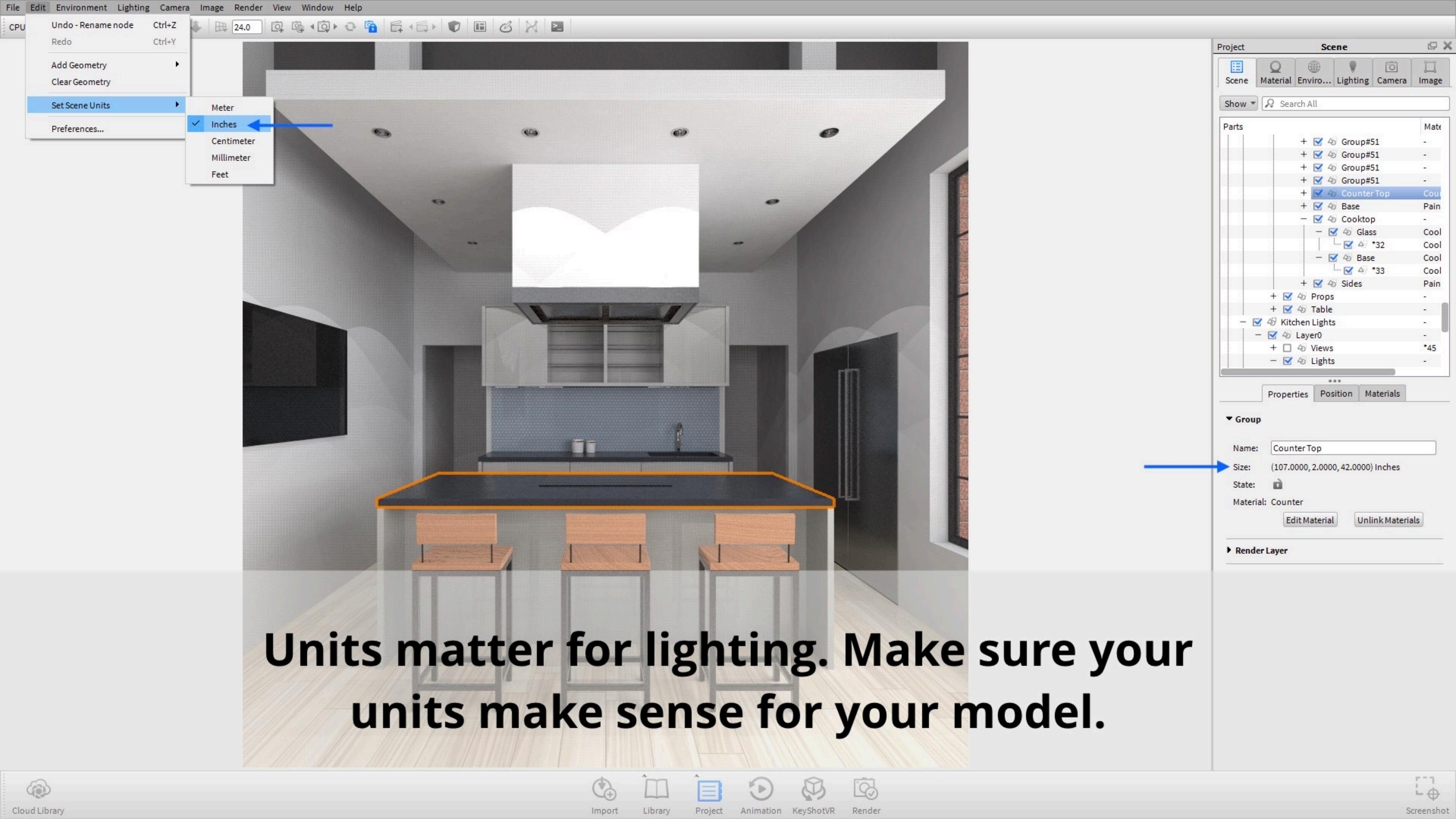


Tips for Interiors

Real Size and Units

- Use real dimensions for modeling
- Realistic scale and size





- Undo - Rename node Ctrl+Z
- Redo Ctrl+Y
- Add Geometry
- Clear Geometry
- Set Scene Units
- Preferences...

- Meter
- Inches
- Centimeter
- Millimeter
- Feet

Project Scene

Scene Material Enviro... Lighting Camera Image

Show Search All

Parts

+	Group#51	-
+	Group#51	-
+	Group#51	-
+	Group#51	-
+	Counter Top	Cou
+	Base	Pain
-	Cooktop	-
-	Glass	Cool
-	*32	Cool
-	Base	Cool
-	*33	Cool
+	Sides	Pain
+	Props	-
+	Table	-
-	Kitchen Lights	-
-	Layer0	-
+	Views	*45
-	Lights	-

Properties Position Materials

Group

Name: Counter Top

Size: (107.0000, 2.0000, 42.0000) Inches

State:

Material: Counter

Edit Material Unlink Materials

Render Layer

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

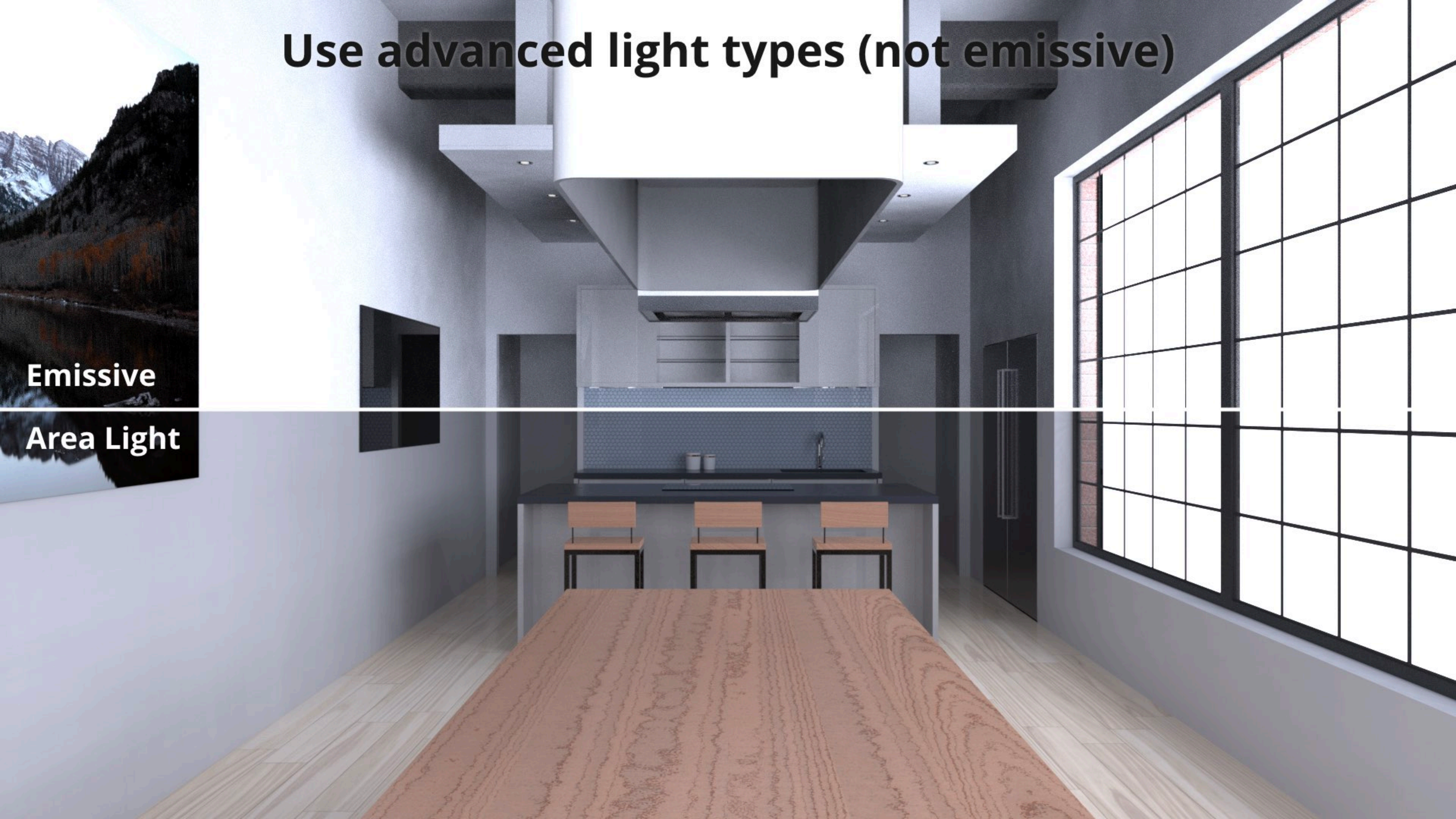
Use Multiple light sources



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

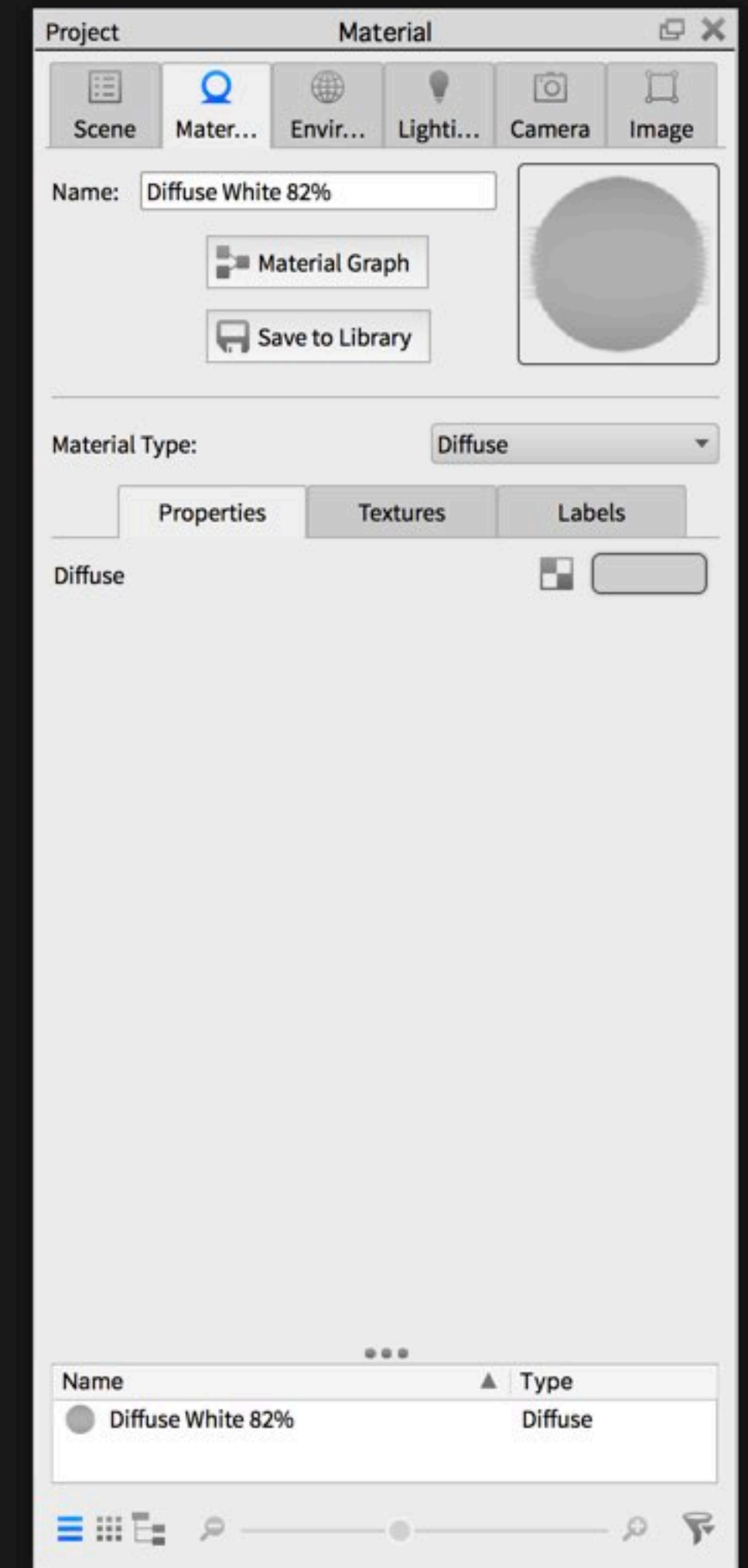
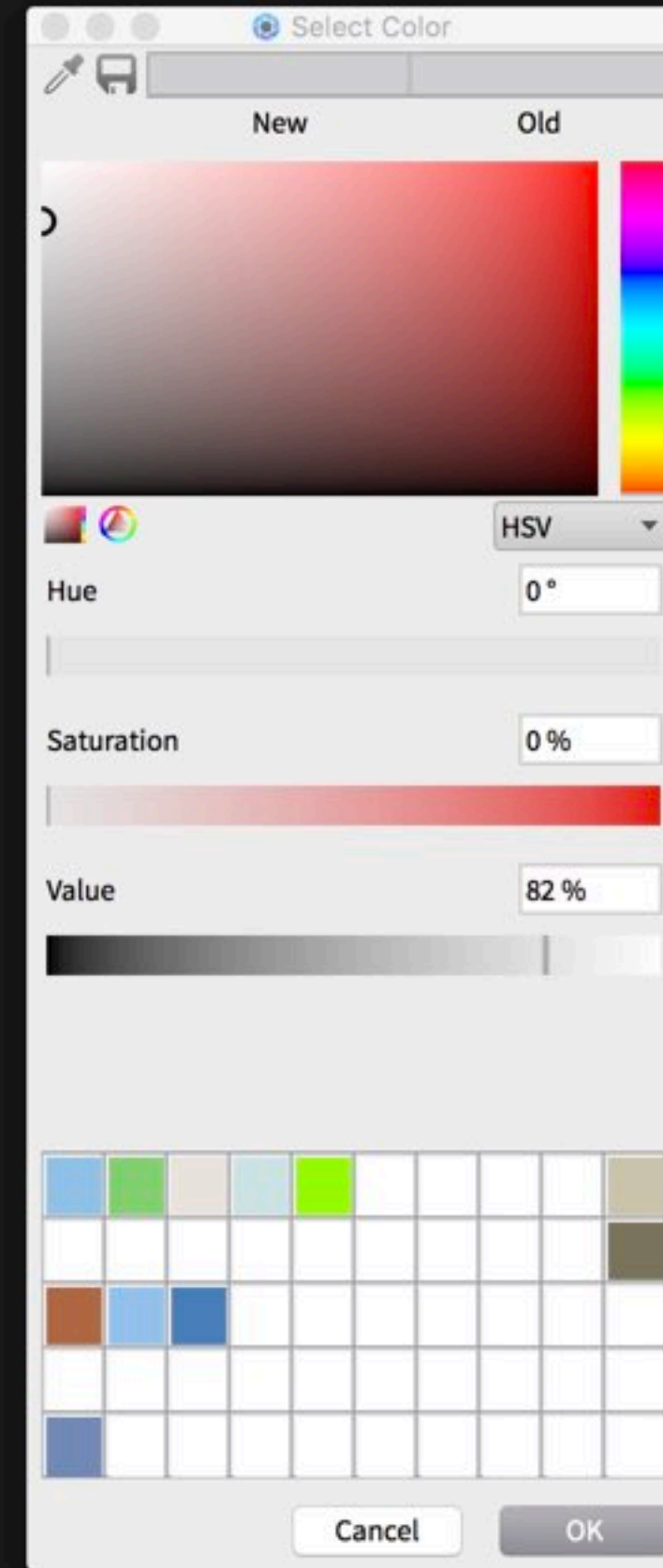
Neutral

Cool



No Pure White for Materials

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



Use Shift Lens



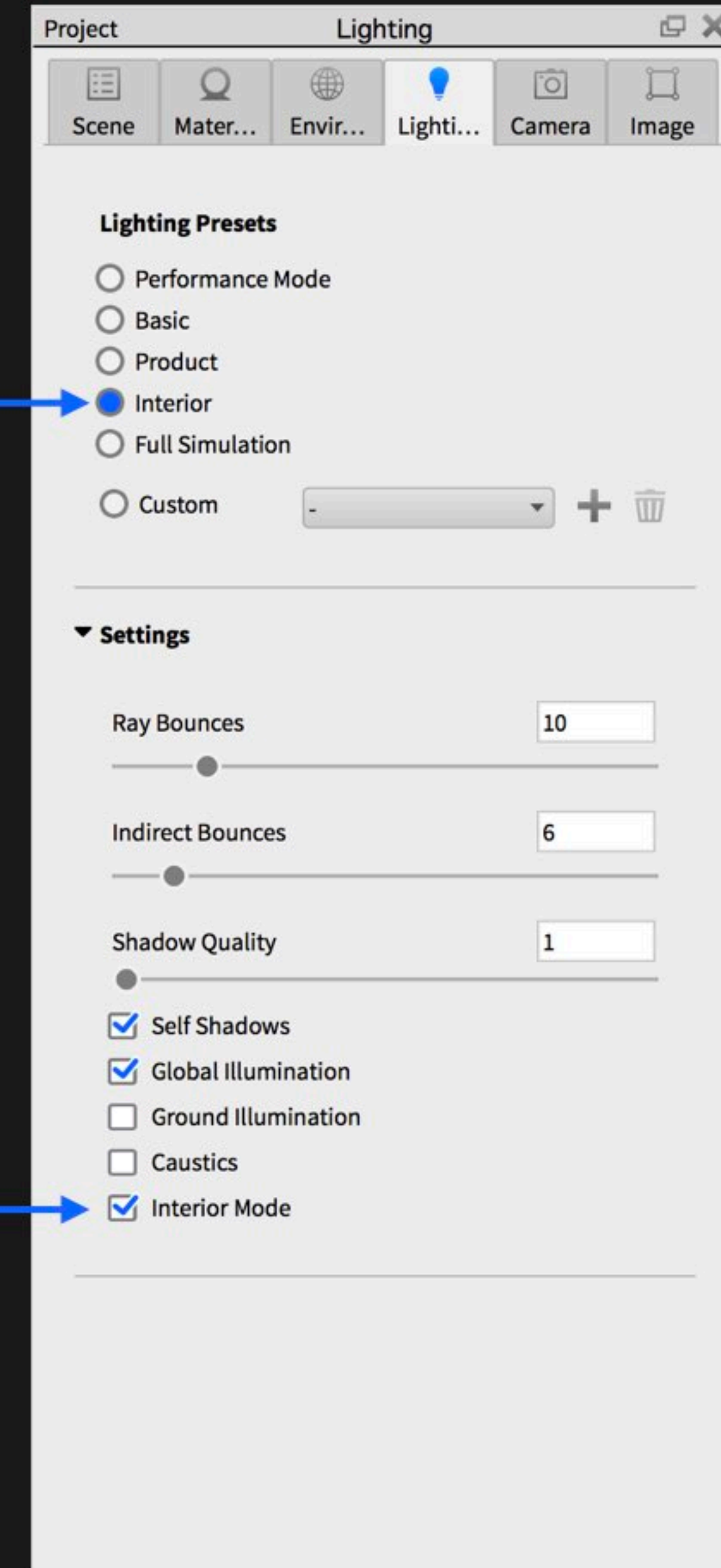
Regular Perspective Lens



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](https://www.keyshot.com/scenes)
- [keyshot.com/forum](https://www.keyshot.com/forum)

www.keyshot.com/resources/downloads/scenes/


PART 1 PART 2 VERSION 1 VERSION 2

Binoculars
by Luxion




DOWNLOAD

Contemporary Bathroom
by Luxion




DOWNLOAD

Eternity Ring
by Luxion




DOWNLOAD

Bathroom Interior
by Tim Feher/Luxion




DOWNLOAD

Stool
by Esben Oxholm




DOWNLOAD

Watch
by Esben Oxholm




DOWNLOAD

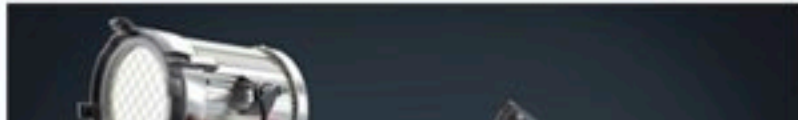
Tablet & Stylus
by Luxion



KeyShot Camera
by Luxion



Studio Lights
by Luxion



Questions?

Thank you for watching!

keyshot.com/learning