Ai Mesh Light

Torus shapes converted to mesh light. Models (left) kind permission from Lee Perry Smith.

In situations where conventional light shapes will not suffice, mesh lights are more suitable. Mesh lights can be used to create interesting lighting effects that would not be possible any other way. For example, effects such as neon lighting or a car light motion trail effect can be achieved more easily with mesh lights.

Geometry converted to mesh light

An example mesh light scene can be found here.
The current limitations when using a mesh light are:

- Mesh Light ignores smoothing on poly objects.
- NURBS surfaces do not currently work with Mesh Light.

To create a mesh light, select a mesh and go to **Arnold->Light->Mesh light**. A separate node is created to represent the mesh light source which references the shape node and has the same attributes as a regular light. It should be visible in Maya windows, such as the Light Editor, Light-linking Editor, etc.

![Sphere converted to Mesh light with 'Light Visible' enabled](image)

⚠️ Changing the mesh parameter "translator" to "mesh_light" is still supported, however, it is now considered as deprecated and will be removed in the long-term future.
Mesh Attributes

**In Mesh**
Displays the name of the shape used as a Mesh Light.

**Show Original Mesh**
Displays and renders the original mesh shape chosen to represent the Mesh Light.

**Light Visible**
Makes the light source visible to the camera.

[Image of mesh light in disabled and enabled states]
You may need to increase the number of *subdivision iterations* for the mesh light if the color texture is clearly visible in specular reflections. For example, this may be evident in a scene where a TV screen is reflected in a glass window.

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**Mesh Light vs Emission**

The example below is a comparison between a mesh light and a surface that has a `standard_surface` shader assigned to it with a high Emission value.

You can see that even with *diffuse samples* = 16, the *emission* is noisier than a *mesh_light* with *diffuse* samples = 2.
Below is another comparison test between a mesh light (left image), and a sphere with a highly emissive `standard_surface` shader assigned to it (right image). As you can see in the mesh light image, light is bounced around the scene, whereas there is no bounced light in the emissive sphere render. This is because the rays from the mesh light work in conjunction with the Diffuse rays, whereas, only the primary rays are considered when using emission only. Even with 6 Diffuse samples, the render using Emission only contains far more noise.

In the example below, `diffuse` samples have been increased to ten to get a clean result using only emission in the scene. With a `mesh_light`, the scene only requires three `diffuse` samples.
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