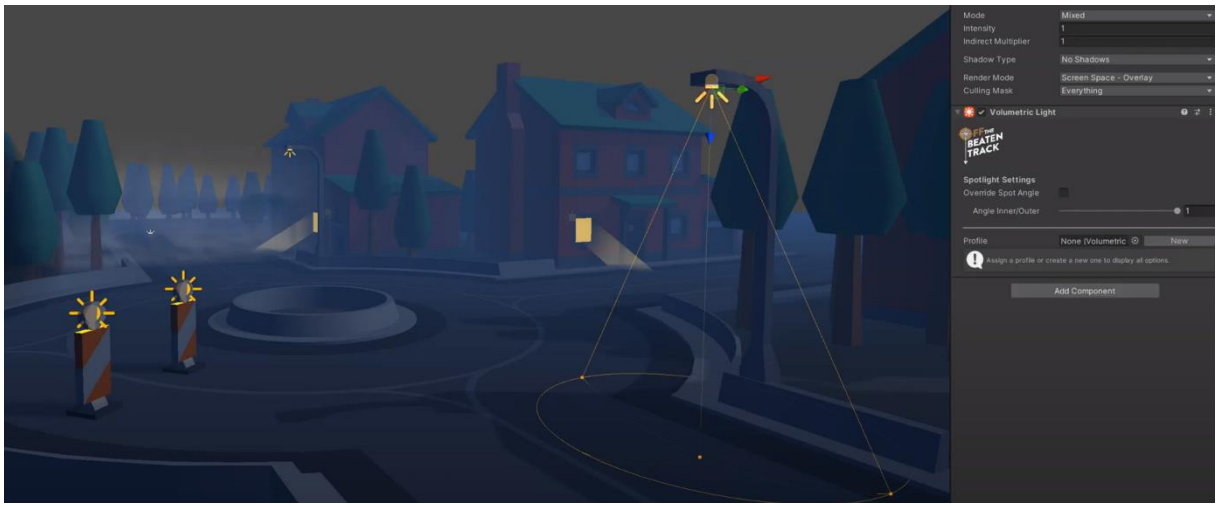
Volumetric Light System

Version 1.0.0

This Asset is designed to be a fast and flexible extension for the Unity URP light system, allowing you to turn existing lights into volumetric lights. Highly flexible and lightweight volumetric lights to fit your artstyle. This asset allows you to design different looking lights quickly and with ease!



Thank you for purchasing this asset. You can always find the latest version of this documentation (with more images and gifs) under this link:

https://wiki.beatentrack.games/share/585cd38e-10ce-4ec8-ae64-d7d2119065ea

If you need additional support for this asset, feel free to join our discord server or use our contact form:

https://discord.gg/FnkUr9y
https://beatentrack.games/contact/

Features

- Incredibly easy set-up (just add a component!)
- Light volumes for spot, area and point lights
- Intersection fade effect with other objects
- Performant: fueled by lightweight shader graphs
- Camera distance fade effect
- Profiles to adjust multiple lights as a group
- Custom fading via gradient
- HDR color
- Alpha & additive blending modes
- Animated fog textures
- All properties adjustable per light
- Override light color
- Real-time adjustment of parameters!

Includes

- Demo scene
- Various sample profiles to get you started
- Shader Graphs for easy modification

Compatibility

- Unity 2019.3+
- URP 7.1.8+ (excluding Built-in/HDRP)
- PC, macOS (OpenGL/Metal), Consoles, Android/iOS (OpenGLES 3.0+)

Limitations

These are no “true” volumetric lights, as some other more expensive (and more performance-heavy) volmetric light systems for Unity are. These lights are simple, performant, and easily customizable. There is no support for shadows or directional lights. We currently only support URP, but are considering to port the asset to the built-in render pipeline.

Creating a volumetric light

1. To turn an existing light into a volumetric light, simply add the “Volumetric Light” component.
2. Create a new profile or assign a profile you have created before. This profile holds all the settings for the light - if you assign it to multiple lights, they will share the same settings.
3. Adjust the light to your convenience!

Settings overview and explanation

• **Profile**: This is the profile that holds all settings for the volumetric light. You can have one profile per light or make them share profiles if they should look alike (e.g. for placing several street lamps).

• **Blending Mode:** Sets how the volumetric light colors should be blended with the rest of the scene. Additive will add the color on top, while alpha will use an alpha channel to display the colors transparently.

• **Override Light Color:** The default is to use the color of the source light, but you can also use this setting to set another color for the volume.

• **Intensity Multiplier**: By default, we will use the intensity of the light to determine how visible the light volume should be. With this setting, you can adjust the intensity of the volume relative to the intensity of the source light (higher values = more visible volumetric light).

• **Fade distances:** The volumetric light fades in and out in various directions. These settings let you adjust how these fade distances work.

  o **Geometry Distance:** Control how sharp intersections with your scene geometry should look. At 0, sharp edges are seen at any intersection.

  o **Camera Distance:** Fade out volumetrics when approaching with the camera. At 0, a sharp cut can be observed when entering volumes.

  o **Edge Fade Strength:** Create soft shapes by turning this volume up. At 0, the shape of light is defined by sharp edges.

• **Custom Fading:** If you want you can supple a gradient to very precisely determine the intensity of the light the farther it travels away from the light source. This can be used for various cool effects!

• **Use Fog textures:** You can use a texture to make the lights look like they are interacting with fog or dust in the scene.

  o **Fog texture:** The texture that should be used. We ship one with our demo scene (which actually is a rock texture)

  o **Fog texture tiling:** Adjust the tiling of the texture, i.e. how often it is repeated / tiled.

  o **Fog opacity:** Determines how visible the fog texture is. At 0, the fog texture is invisible (and only the “regular” volumetric lights are shown). At 1, the fog is fully visible, determining very strongly how the light volume looks.

  o **Vertical scrolling speed:** The texture can scroll along the Y-axis (up/down) to add some movement to the scene.

  o **Horizontal scrolling speed:** The texture can scroll along the X-axis (left/right) to add some movement to the scene.

• **Override Spot Angle (spotlights only):** When turned on, you can adjust the angle of the spotlight volume independent of the angle setting of the light itself. When this is turned off (default), the angle of the source spotlight will be used.

How it works

We believe that it’s important to know how the systems you are using in your games work, so that you can make informed decisions if and how you want to set your settings and make best use of the system. Under the hood, our system creates 3D models that represent the shape of the various light types.

These 3D volumes are rendered using a custom-made shader that realizes the various settings into colors and light intensities. That way, the illusion of a volumetric light is formed. This method for creating volumetric lights, like everything, has advantages (performance, lightweight, easy to use) and drawbacks (no support for shadows, because the 3D volumes are static).