MONOION

PRESENTS

Modular Emissive Lighting for Unity

My asset Creation workflow & Other information about the asset

There is no High poly or cage or baking or uv's

You get a high poly look from low to medium poly geometry

Generally the companies like Disney, iLM and Star citizen will still have uv's, they generally just do a box projection and adjust for texel density along with hand painted masks.

However that's not how I do things, I can and have done things the standard way and I think I'm pretty decent at the whole process- but it eats so much time, I would rather be more productive especially being a one man team, I have to find every way I can to streamline my processes.

So I opted to not have to deal with uv's at all, almost- I still use uv's for signage and decals etc.

So here is my workflow in a nutshell

model object in 3D as usual > add edge bevels >adjust vertex normal's>bake vertex AO>bring into Unity>Check import settings Normal's to Import and Tangents to import >Drop any triplanar shader onto the various parts> adjust material properties>Create prefab> done!

I have made some quite advanced triplanar shaders that I use myself and allow for all the standard scratches undercoat, paint layers, dirt, grime etc, just like you would expect from baked maps except mine are generated procedurally in real time and they are efficient too.

This way I get to just model real fast chuck on a bunch of materials, move a few sliders and get some real nice results, without too much time and effort so I can focus on what's important rather than eating all my time up and not getting too far.

I have included a few simple triplanar shaders in this pack to get you started, nothing as advanced as the ones I use for myself but, they are a good start so you can understand the process and simple as they are - they do allow for a wide range of materials to be made fast and efficiently in real time.

As you will see sliders for metal, roughness, colour and input map, tiling and map mix where necessary-You can build a myriad of materials. If the material uses a texture, it will only be a single 512k texture- That does not mean that you will only have 512k quality like with the old way of baking. no.

Instead, we use a tiling multiplier to adjust the texel density

A 512 map set to 1 gives a texel density of 512px/m2

So for every 1 meter you have a 512k map and the next 1m a 512k map and so on (just think of a 1mx1mx1m cube with a 512k map on each face- this is a lot of detail and you only really need something this high if you are developing something in VR.

In my VR stuff I usually use 1024px/m2 (The same as Disney & iLM)

which means I set the tiling multiplier to 2 when using a 512k input map.

but it really depends on the project and how you have designed your shaders.

The texture used on these materials is primarily a roughness map but does drive some of the albedo channel in one of the shaders.

I use Amplify Shader Editor (ASE) to create my shaders so, if you have that you can load up the shaders and see how they are constructed for yourself - nice and simple no fuss.

The Emissive Materials are fast and simple and even so have a huge ability for customisation of your light colours.

Tube burn- comes from the baked vertex AO and simulates the burn that fluorescent tubes get over time, it gives a nice cheap variation that you can control- in some cases you would want to turn it off and others it gives a nice effect and you would want to leave it on, its up to you and depends on your projects.

Emissive colour Choose your emissive colour and intensity with the familiar controls - You will need to strike a balance between what you have here and what your post processing bloom valuse are set to.

Finally DeSaturation slider - so that once you have chosen the right colour its easy to take the edge off and make the light look more realistic by de-saturating.

Remember to always Enable GPU Instancing o any materials you make as this will allow batching to take place.

There are 8 emissive light materials but you can create any number and lots of variations

There are 6 non-emissive materials from steel, to plaster, to wood but again you can create a large number of variations. - Just check the internet for PBR charts and values and if you use your own roughness maps even more so.

In the prefab directory there is a post processing prefab that you can drag into any scene, this contains the post processing volume, where you can change the profile effects. Make sure your main camera has the post processing layer added, just check one of the demo scenes to see this relationship in action.

If you're not using Unity's post processing for the bloom then, just refer to your providers setup instructions. my asset will work regardless.

In the prefab folder you have the Original prefabs the ones with white bulbs/tubes, they are the parents of all other prefabs. Then in the other 5 folders you have prefab variants' which like I said are all variants of the original ones. I just made one of each for each of the rainbow colours and only on high intensity hdr emission- where as you can setup any colours you wish including lower intensity so you only get the colour you wanted rather than having the white coming out too. Again it's all up to you.

I suggest you take a look at the scenes in the demo folder and get it working right in there before you move over to your own project scenes.

It will look a bit dodgy at first until you build the lighting after that you should be all good, if not then you need to make sure you have post processing installed via the package manager to give you the bloom effect.

Scale: Assets where designed with several factors for determing scale- character being 2m tall, actual measurements in the real world and what looks and feels right in VR and modular snapping with unity scale- I spent a lot of time on getting the balance of all these things right. - All my assets use the same methods for determining scale and are checked with other models I have produced in this scale.

Modularity grid snapping will work perfectly, I use pro grids from the package manager and that works just great.

I do intend in a future update to make the lights themselves modular so you can mix and match different parts and form your own kind of lights - Technically you can already do that partially, but it's not at the state I'm happy with so I'm not advertising it just yet - If you take a look at the individual lights you will see that everything is moveable, you just have to make sure you move and rotate the right parts or you will lose snapping. Something I plan to work on in the future.

So I hope you enjoy this asset and it gives you some ideas and makes your life a bit easier, thank you for your support and I wish you every success on your journey.

Kind Regards

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