

GLASSES STUDIO 3D DOCUMENTATION

With this software, you can generate glasses 3D models ready for Jeeliz Glasses VTO widget.

Software usage

The typical user scenario for this software is:

1. User import a glasses 3D model in GLTF or GLB format,
2. The 3D model can be checked in the 3D viewer,
3. The material parameters can be changed. Indeed, Jeeliz Glasses VTO widget use its own 3D renderer,
4. You can export the generated 3D model as a proprietary JSON,
5. You can load the generated 3D model into Jeeliz Glasses VTO widget

Limitations

There are these limitations:

1. The input 3D model needs to be correctly positionned, oriented and scaled (see the *3D glasses pose* section below),
2. Only normal map and color map textures are supported,
3. Textures need to be included in the input file. It is not possible to change, remove or add a texture after importation,
4. We use THREE.js GLTF importer to parse the input 3D model. Some material parameters can be lost. You need to recover them by tuning the material sliders.

Input file format

- The 3D model should be exported as GLTF or GLB file (Exporter from *Blender* works very well),
- The 3D model should be made only with quads, or triangles, not both,
- The model should be in low poly, with 20000 points maximum (it would be better around 5000),
- The lens surface should not be flat, but slightly bent (otherwise normals won't reflect the environment map correctly),
- Faces should be oriented (indices depends on the normal vector, to enable backface culling in rendering),
- If necessary, a normal texture or diffuse texture may be drawn. If multiple textures are needed, they should have the same UV mapping. The texture should have a power of two resolution (i.e. each dimension should be a power

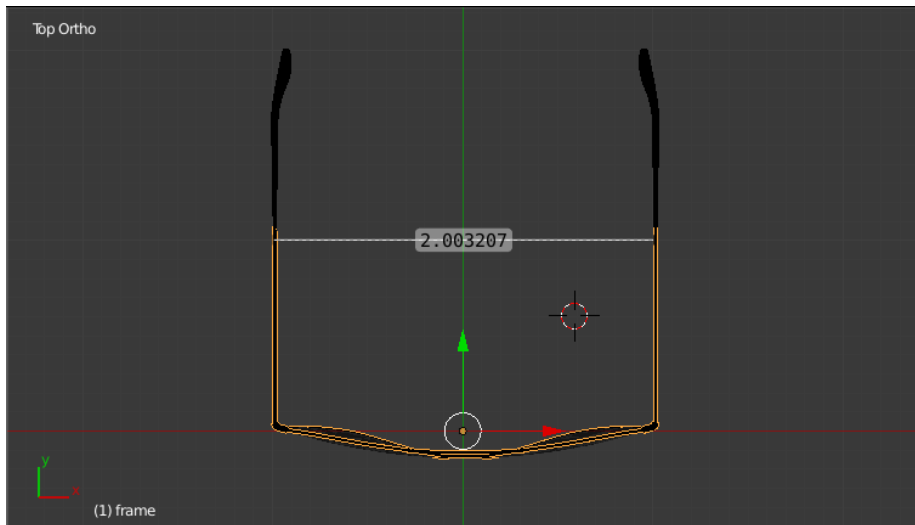
of two number like 256, 512 or 1024 pixels). The maximum dimension of the texture should not exceed 1024 pixels.

3D glasses pose

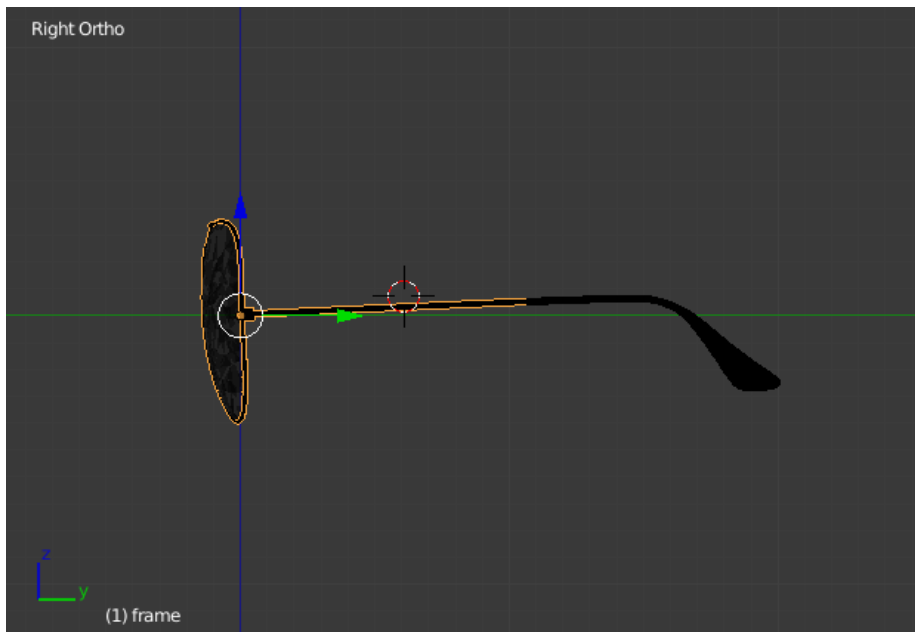
The model should be centered on the X axis (red, horizontal). The vertical axis should be the Z axis (blue). The pupils should be on the X axis (red), i.e. their vertical coordinate should be 0:



The branches should be parallel. The interior width of the glasses should be 2 in world units. The most prominent part of the eyeballs should be tangent to the X axis (red), i.e. $Y = 0$ and $Z = 0$:



The branches should touch the ears at $Z = 0$. It locks the rotation around the X axis (not visible here):



All visual transforms (scale, rotation, position) should have been applied to the meshes.

Import generated model

The generated JSON file can then be viewed with Jeeliz Glasses VTO widget. After widget initialization, you need to run:

```
JEELIZVTOWIDGET.load_modelStandalone(exportedGlassesModel, function(){  
  console.log('INFO: EXPORTED MODEL LOADED');  
});
```

Where `exportedGlassesModel` is the parsed exported JSON file (not the URL or the content string).