My AR Studio

Course program

My AR Studio

- My AR Studio: what it is
- My AR Studio: how it works
- Exercise
- Preparing a model in KeyShot
- Real-time rendering and exporting in GLB

What it is

www.myarstudio.cloud

My AR Studio is a cloud system that allows you to upload and distribute your products on the web and in AR.

MY
AR
STUDIO

Share your **products in 3D,**
web channels and **Augmented Reality**
in 4 simple steps

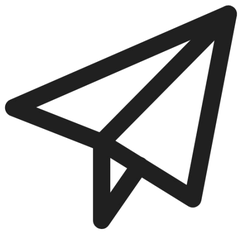
DESIGN BY
puntoquindici

click to see the video

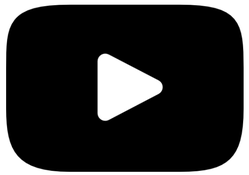
Links

Access our contents

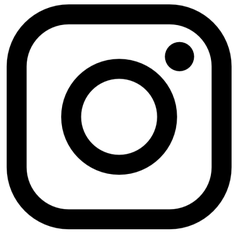
it.linkedin.com/showcase/myarstudio



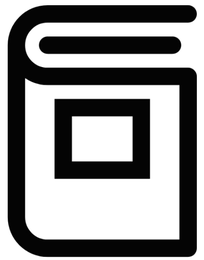
info@myarstudio.cloud



youtube.com/@myarstudio



instagram.com/my.ar.studio



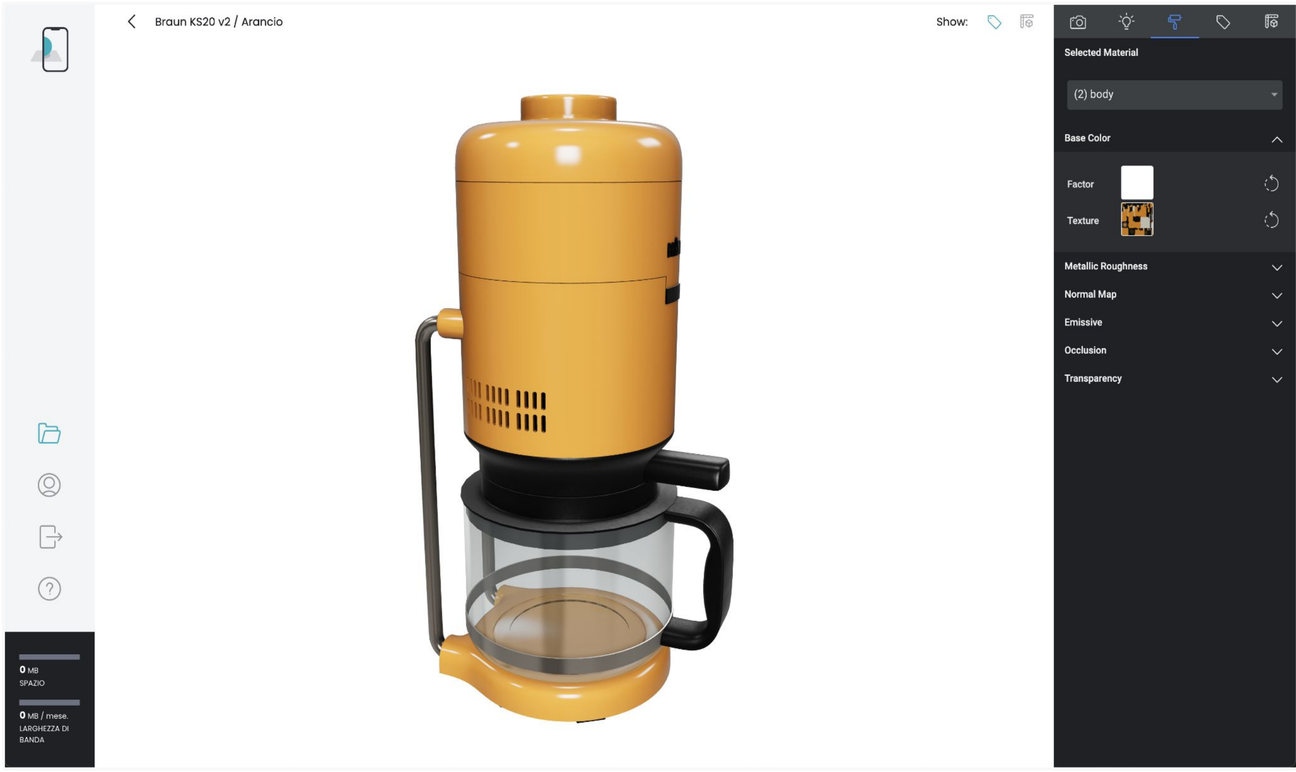
myarstudio.cloud/learn

How it works

Drag the model of your product in GLB format into the My AR Studio editor.

Set the colors and lighting that best enhance it.

Publish it in several independent configurations or grouped in a single product selector.



Distribution

The Universal Viewer of My AR Studio is the tool to distribute your products on any type of device.

Through the automatic generation of links, QR Codes and HTML, you can cover both desktop and mobile browsers, as well as the native Augmented Reality view of Apple iOS and Android.

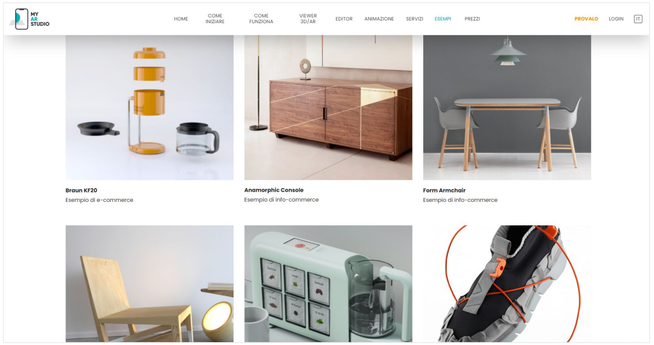
No app needed.

Use Cases

Quality and versatility exemplified.

Click on the images to open the examples

myarstudio.cloud/examples



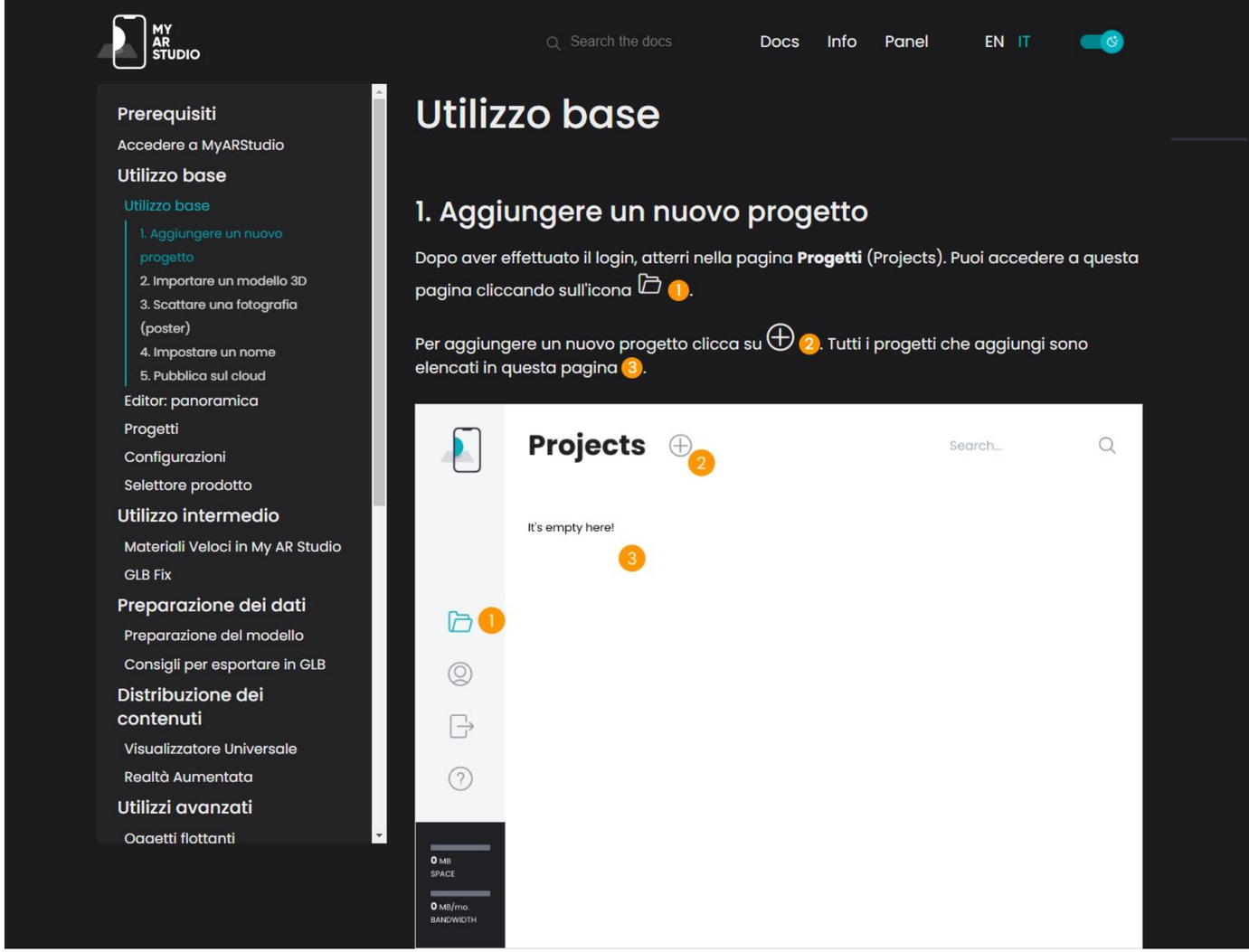
Documentation

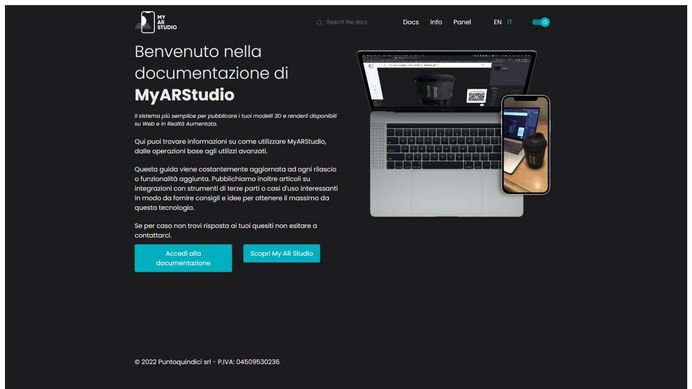
myarstudio.cloud/learn

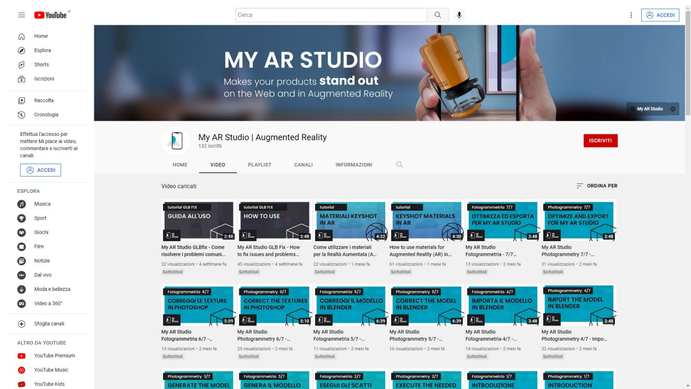
youtube.com/@myarstudio

Extensive documentation with video tutorials:

- My AR Studio
- KeyShot
- Blender
- Substance Painter







Recommended requirements

To work in Augmented Reality with My AR Studio we advice:

Creation

- Chrome web browser

Web viewer

- Any web browser

Augmented Reality

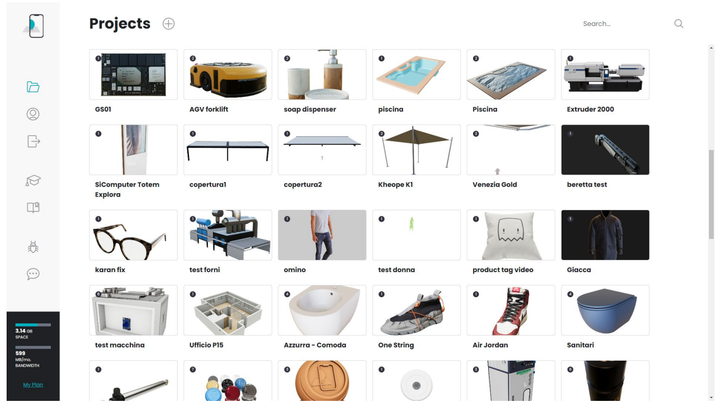
- Recent or enabled smartphones (see this **link**)
- Chrome on Android
- Safari on iOS

Test your smartphone

My AR Studio

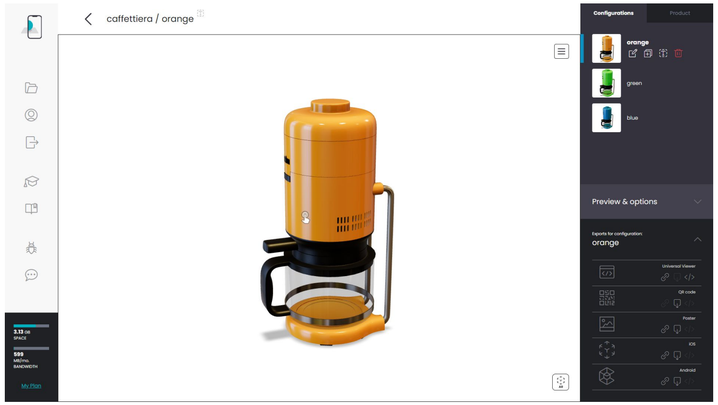
How it works

My AR Studio



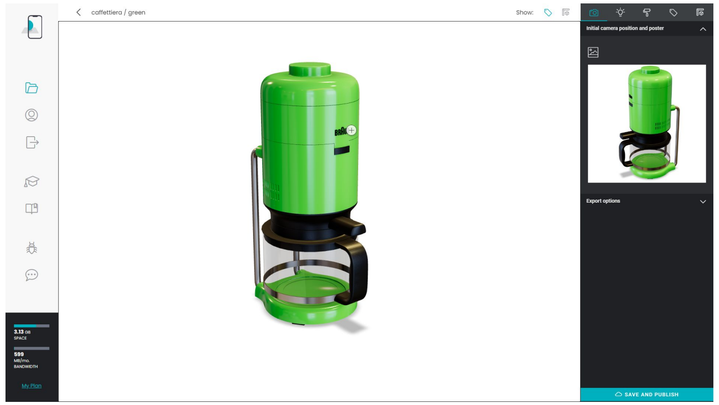
Projects Page

Project list, account management and useful links.



Configurations Page

Management of the configurations that belong to a project.



Editor Page

Set up and modify a single configuration

Projects Page

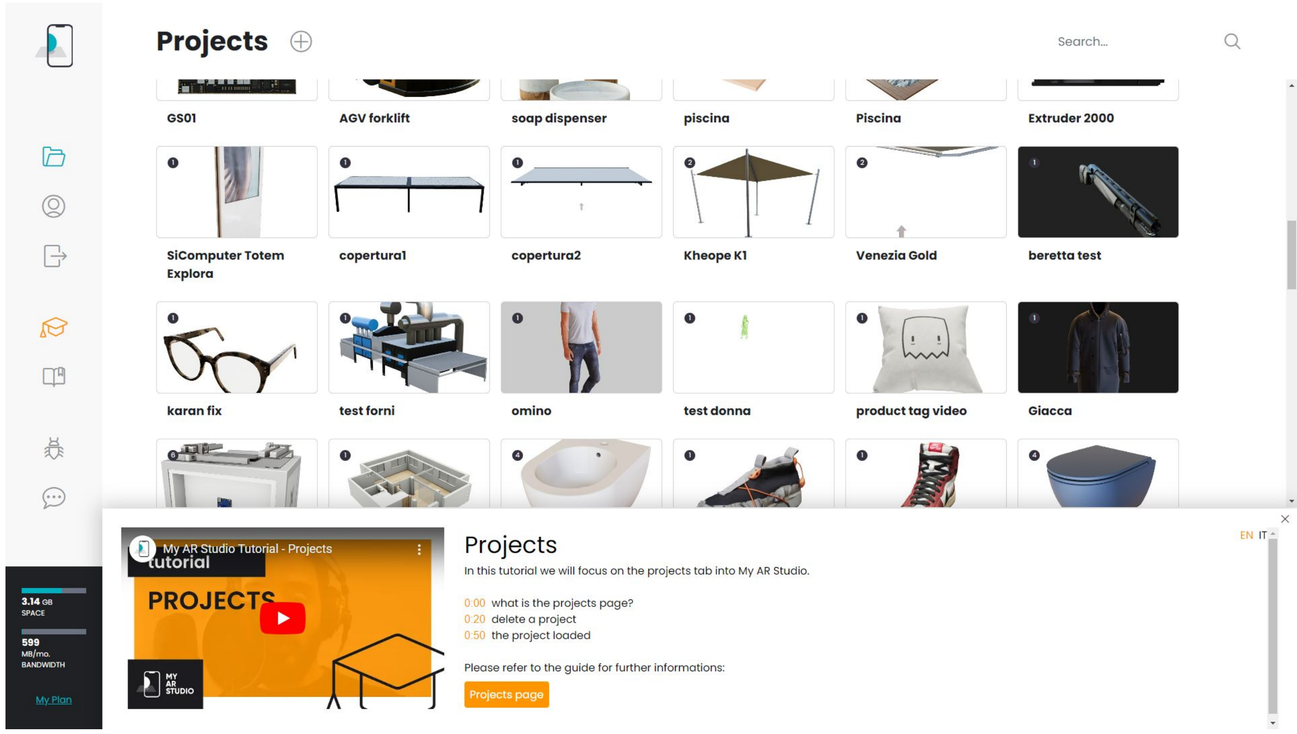
Left column

- Project List
- User Profile
- Logout
- Contextual guide
- Documentation
- Bug reports
- Chat

Plan details panel

Main area

- Add project button
- Search projects by name
- Project list



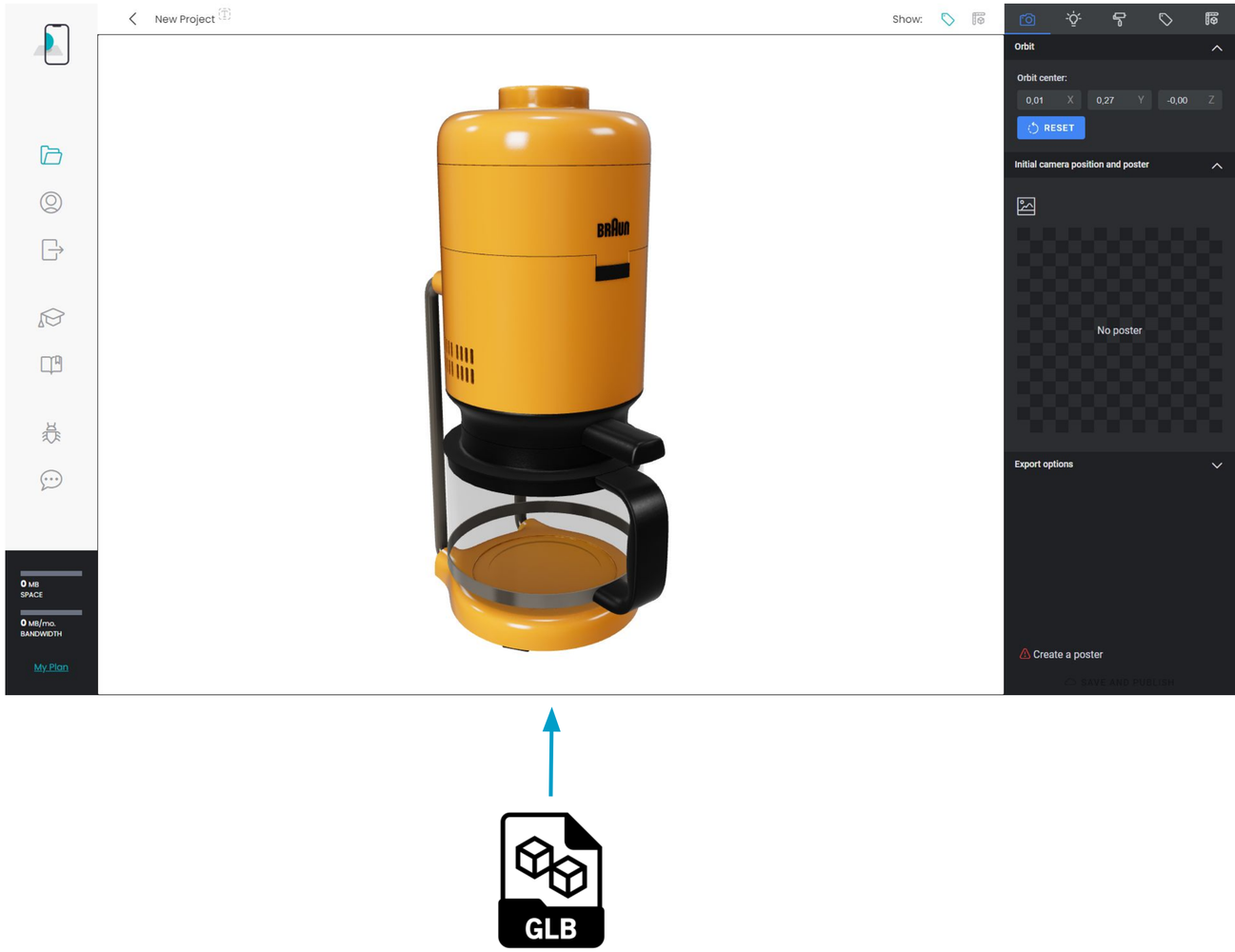
Editor

After clicking the **+ button** next to the Projects header, the editor screen for a new project opens.

- **Center** 3D area
- **Top** Project header
- **Right** 5 tabs with project properties

Drag a GLB file into the window to have it loaded into the editor.

Click in the header to give the project a meaningful **name**.



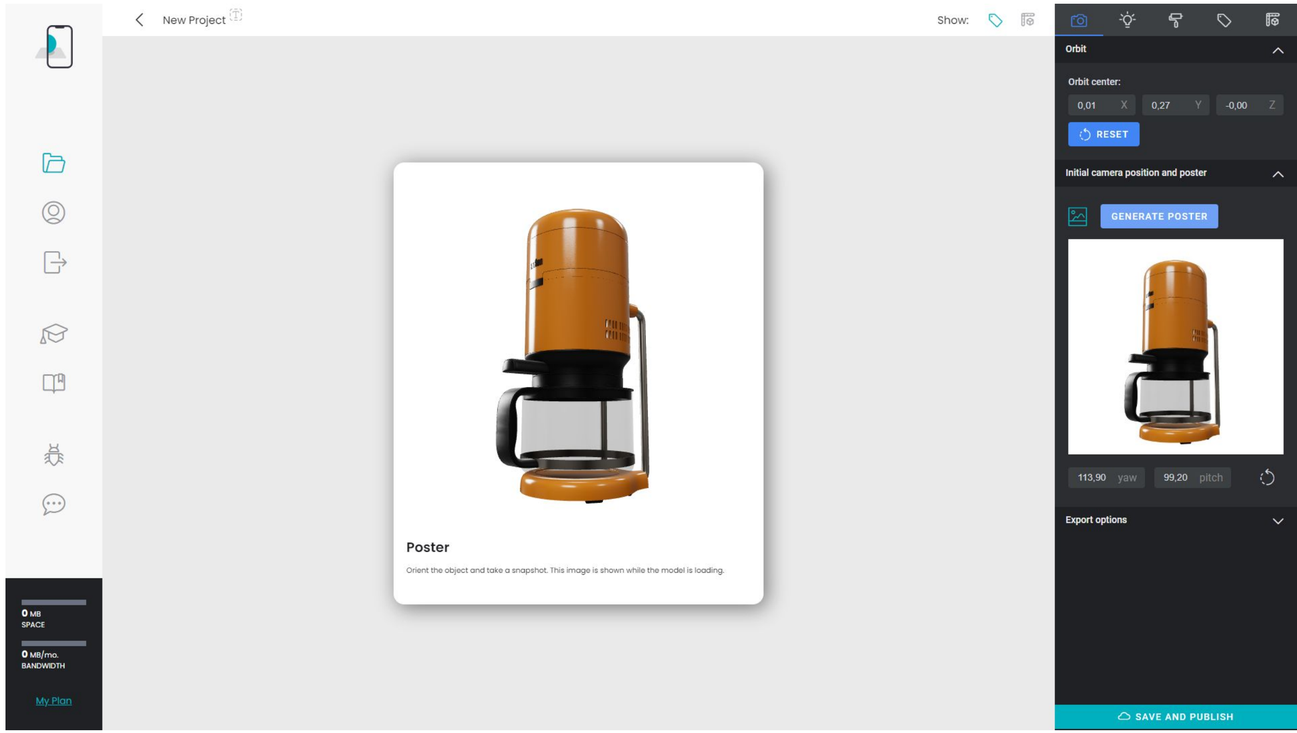
Editor: Export Tab

In the first tab you can **generate the poster**, the image used as a preview of your project:

- Activate the poster icon
- Orient the template as you prefer
- Click the generate poster button
- Deactivate the poster icon

Set the **export options** for the project. These are the same options available on the configurations page.

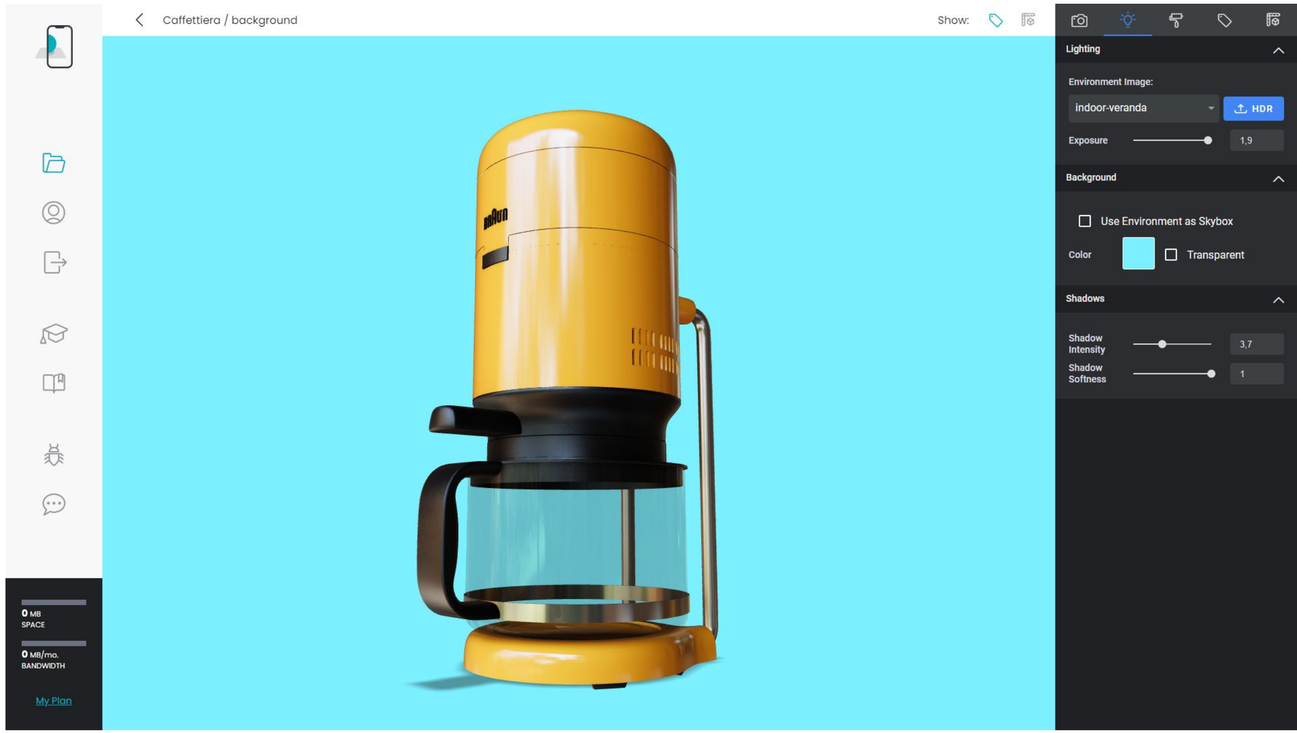
Click the **Save and Publish** button to publish the project in My AR Studio.



Editor: Lightning Tab

Here you can set how the model will be displayed in the Universal Viewer. Specifying:

- The HDR to be used for the lighting and its exposure
- The background
- The intensity and blurring of the shadows

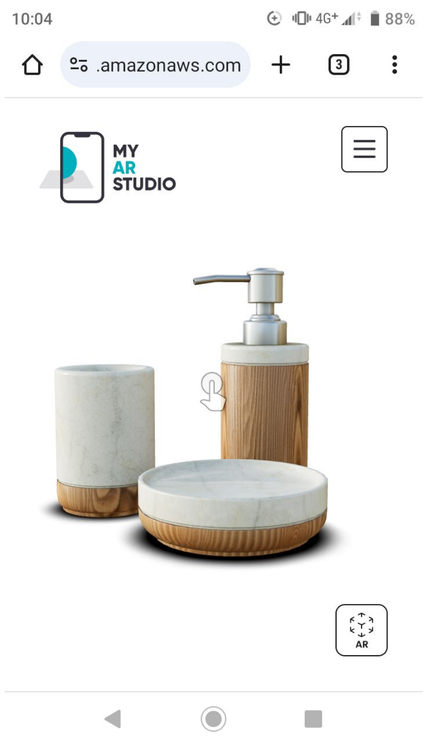


Editor: Lightning Tab

The final appearance of the model will depend on the viewing mode used.

In the **Universal Viewer** the lighting settings specified in the editor will be used.

In the **AR Viewer** the user's smartphone will sample the ambient light. It will use this instead of the lighting settings to better fit the rendering into the image captured by the camera.



Editor: Materials Tab

In the materials tab you can change how the model will look in both the Universal Viewer and AR.

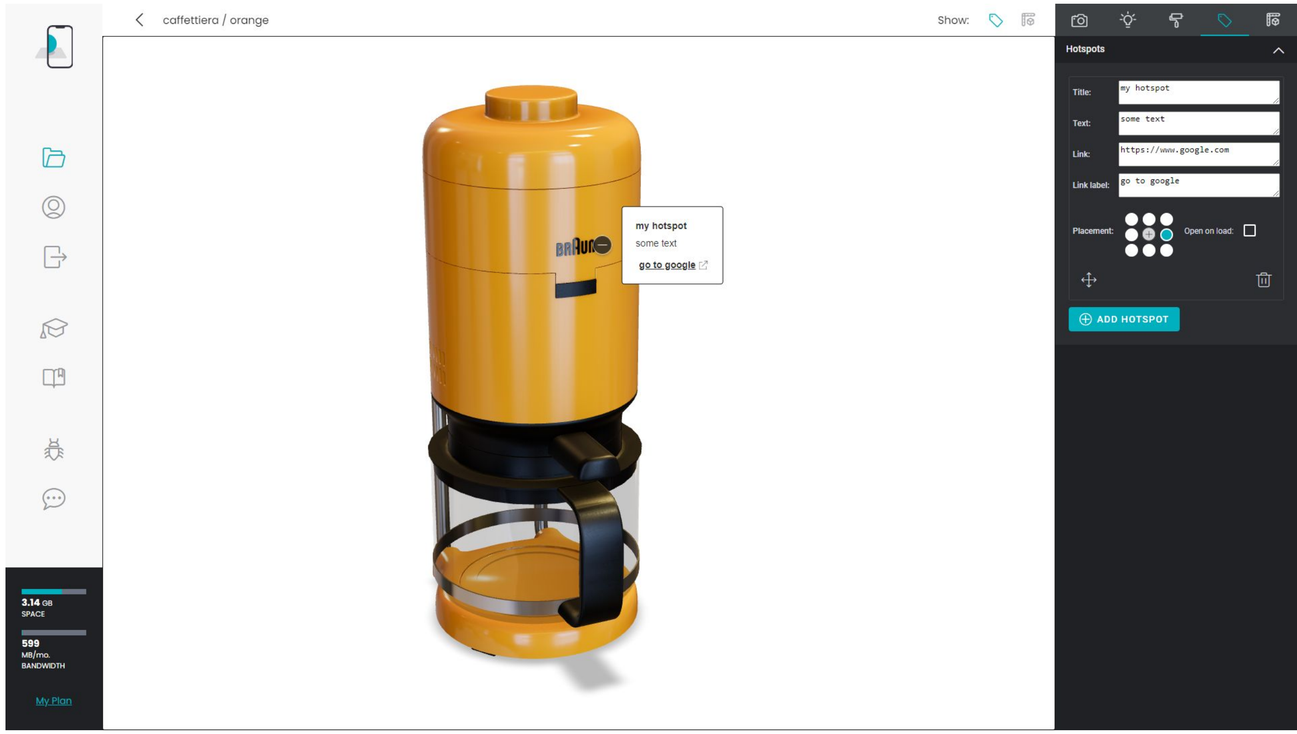
It is possible to affect: color, roughness, metallicity, emission and transparency.

The actual editing possibilities depend on the export specifications that were used in generating the GLB file.

Editor: Hotspot Tab

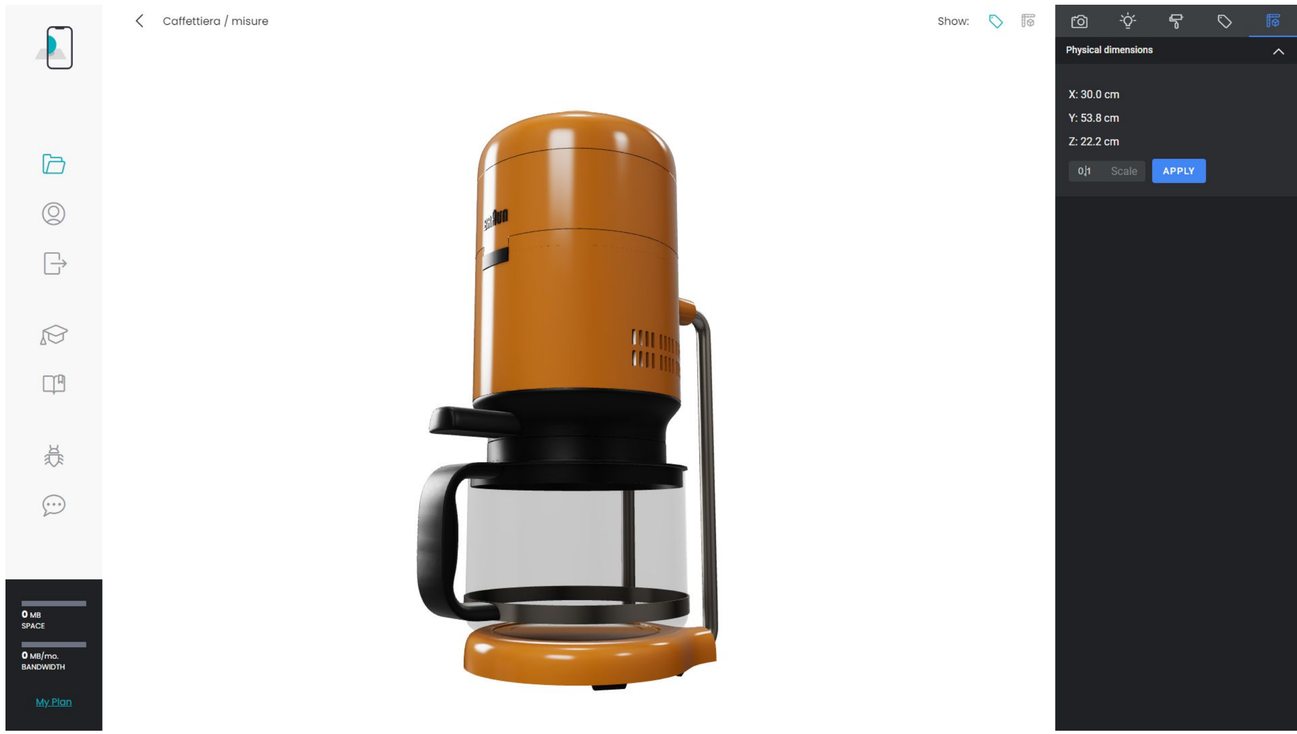
Here you can add hotspots with interactive labels that will only be visible in the universal viewer

Optionally, the user can be given the choice of whether or not to display the hotspots.



Editor: Dimensions Tab

In the dimensions tab you can check the actual size of the model and scale it to your liking.



Configurations Page

By publishing a project from the editor, or by clicking on the project icon from the project list page, you enter the configuration editor.

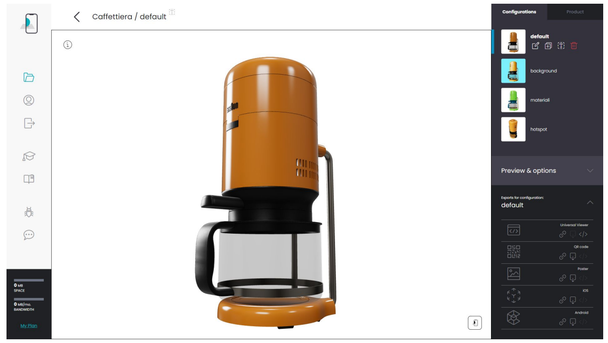
A configuration is a particular setting of your product that can vary by: materials, lighting, model, etc.

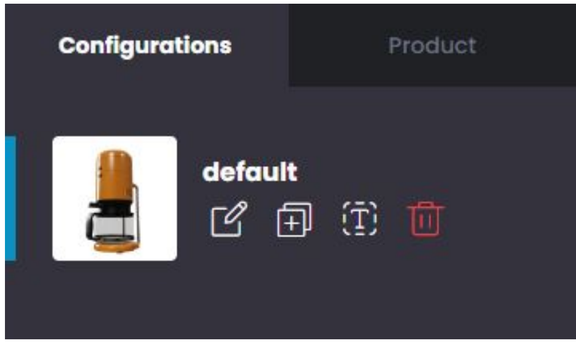
Next to the **thumbnail** of each configuration are 4 buttons:

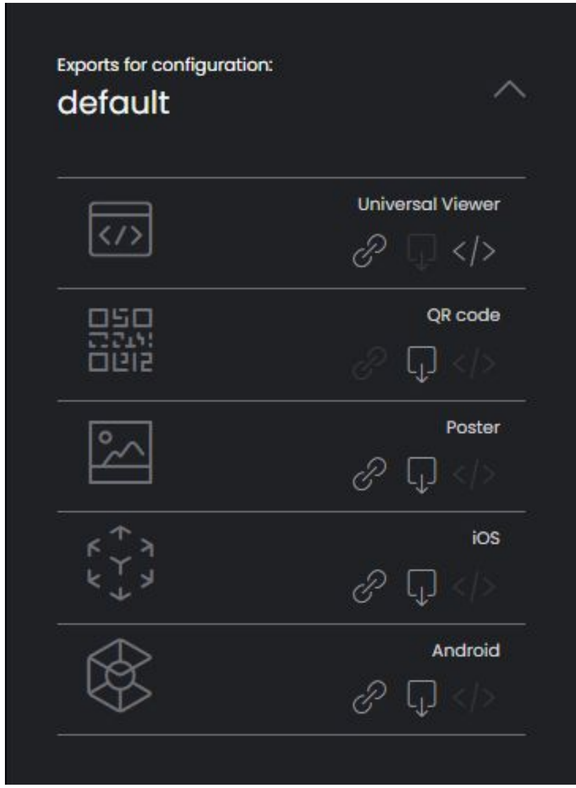
- **edit** configuration
- **duplicate** the configuration
- **rename** the configuration
- **delete** the configuration

At the bottom right are the **exports** of the selected configuration:

- **Universal Viewer** link and embed code
- **QRcode** download
- **Poster Image** link and download
- **USDZ model** link and download
- **GLB model** link and download



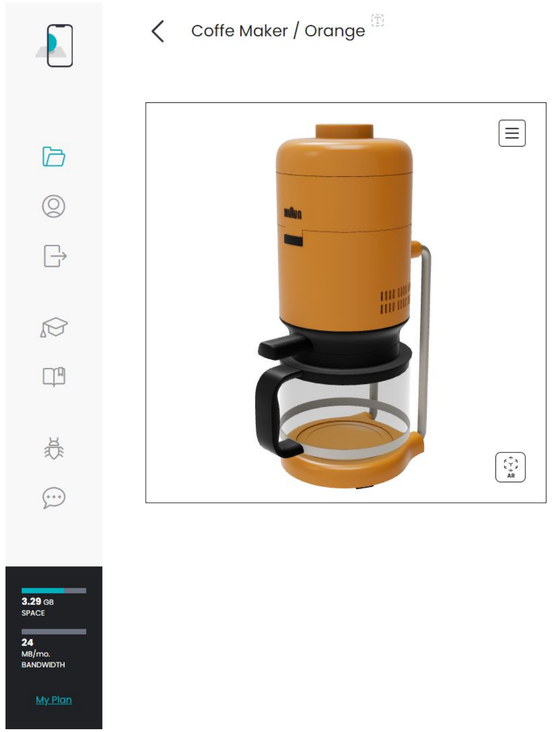




Configurations Page

Open the **Preview & Options** panel to enable the Universal Viewer features for the selected configuration.

- Model Visibility in AR
- Automatic start of 3D web visualization
- Visibility of hotspots
- Visibility of dimensions
- Model placement in AR view



Configurations Page

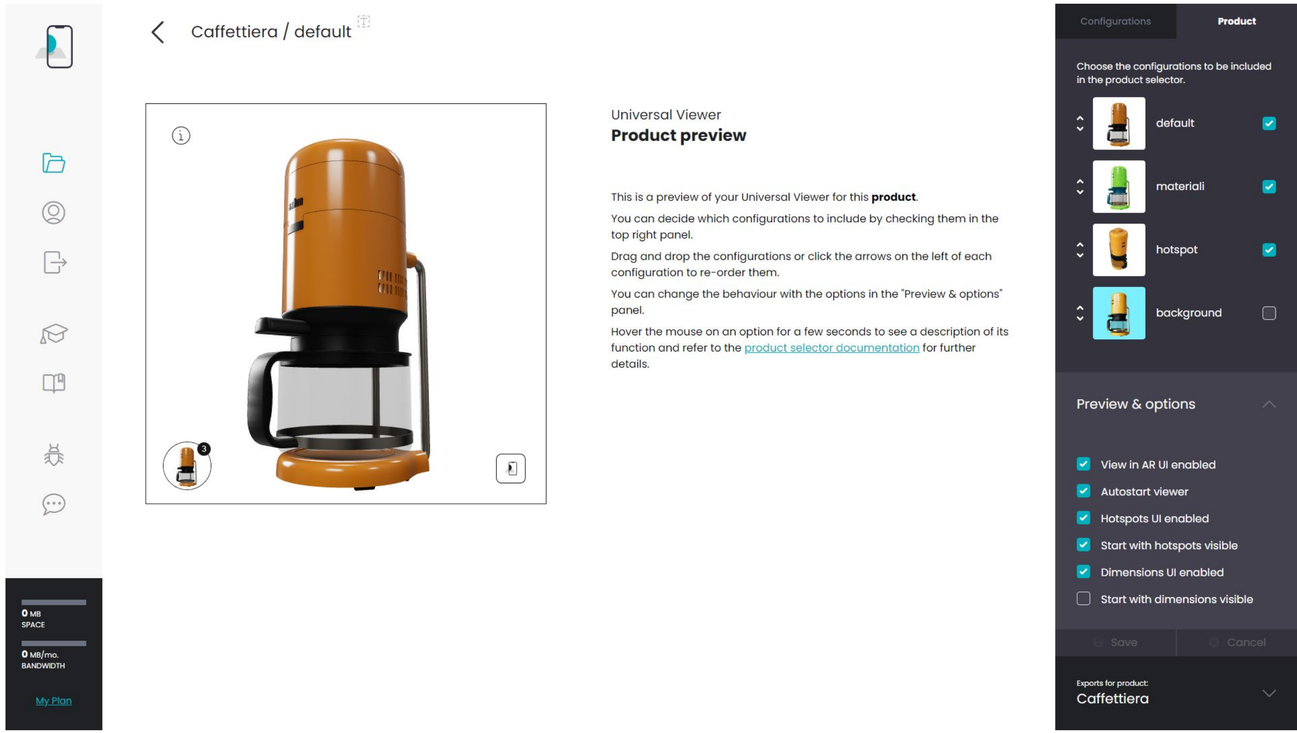
The **Product Selector** tab allows several configurations to be included in a single view in the Universal Viewer.

The user could then choose the version of the product they prefer via a convenient drop-down menu.

The Product Selector has its own specific **preview & options** settings, distinct from those of individual configurations.

At the bottom right will be the Product Selector exports, also distinct from those of the individual configurations.

- **Universal Viewer** link and embed code
- **QRcode** download



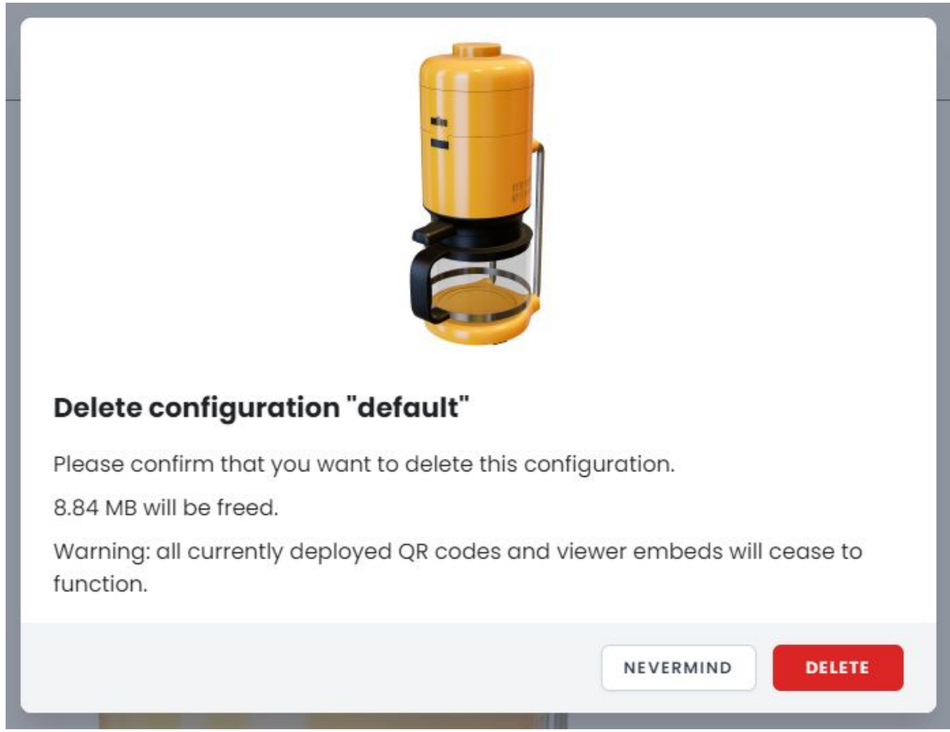
Delete a configuration

Clicking on the **delete configuration** button or the **delete project** button, depending on which page we are on, will open a confirmation dialog.

My AR Studio does not immediately perform the deletion because the **links**, **embed code** and **QR code** associated with the configuration will stop working. So to users who click on an already published link will be returned a "project not found" page.

Deleted links are not recoverable. If we load the same object into a **new project** or a **new configuration**, new links will be generated that are different from the previous ones.

Instead, remember that configurations are **continuously updatable**. For example, if a new version of our product has come out, we can change the already published configuration by uploading the new model. The old links will continue to work, however, showing the updated version.



Exercise

Load and publish a model

Model preparation

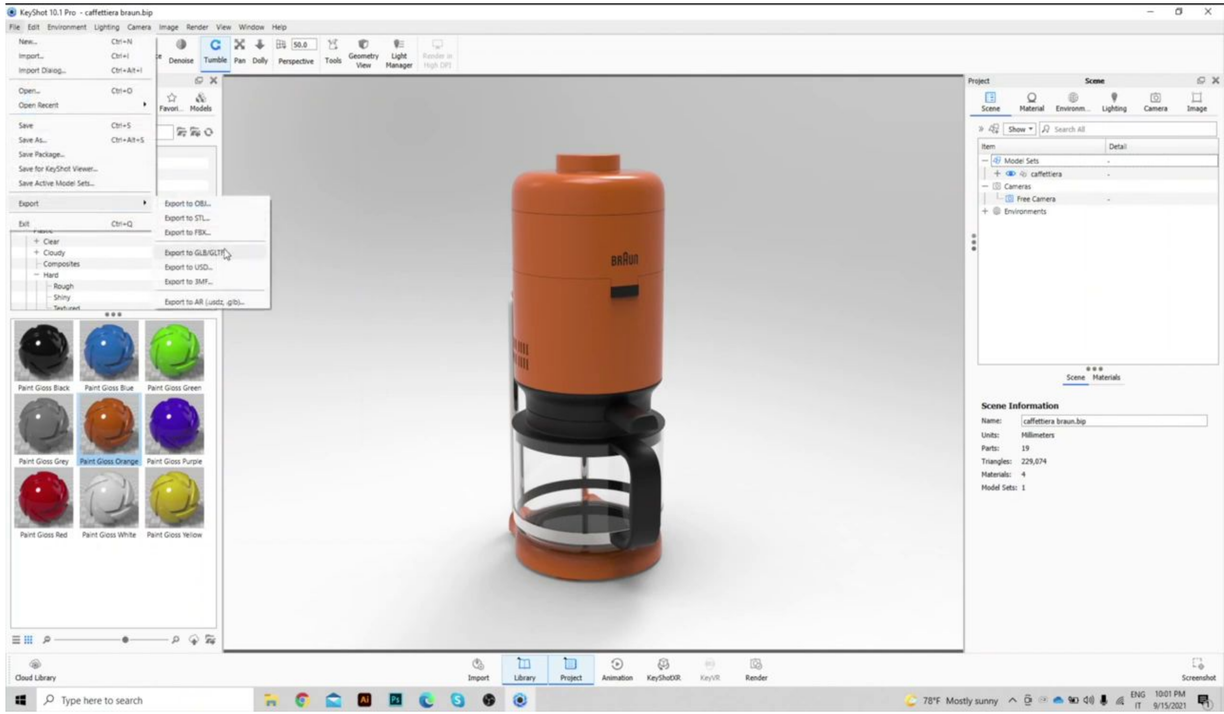
Optimization and troubleshooting with KeyShot

Overview

The purpose of preparing the model for export is to find the best possible compromise between weight and quality. Ensuring less loading time for the user and a performant AR view on every enabled smartphone model.

Export checklist

- Reducing the number of objects
- Reduction in the number of polygons
- Orientation of surface normals
- Separation of surfaces by material
- Compatibility of materials

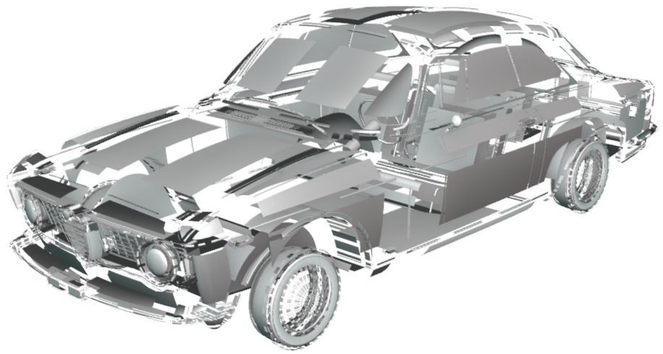


Number of objects

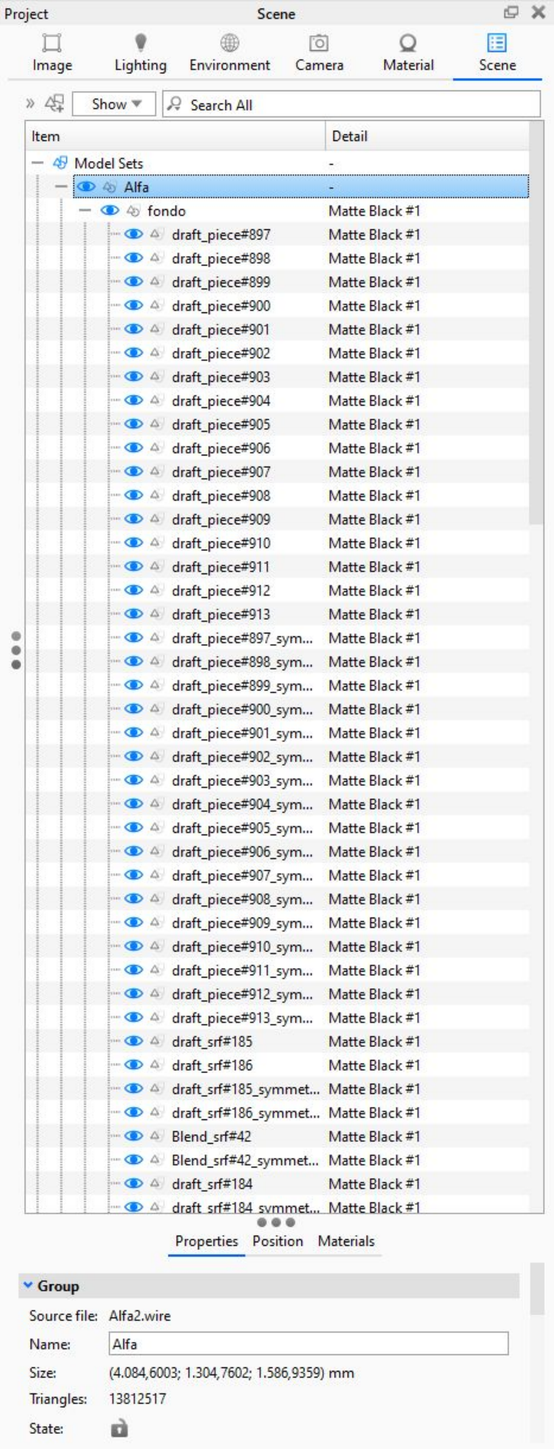
Real-time engines cannot handle a high number of objects. The web viewer will struggle to show them and the AR view may crash.

KeyShot is not a modeling application so it’s better to solve the issue before importing the model into KeyShot.

15 objects



7425 objects



Number of polygons

A high number of polygons can be a problem for most smartphones hardware. Also a higher polycount means a higher download time for the end user.

Keyshot can simplify the model using different tools depending on the geometry type.

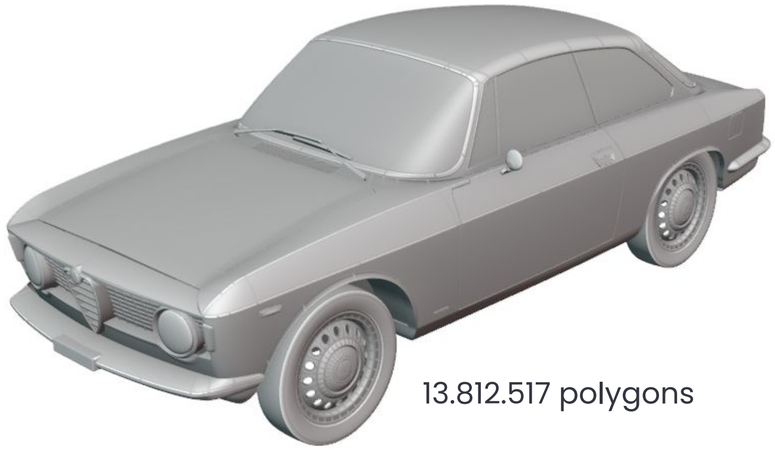
NURBS surfaces:

Tools > Re-Tessellate

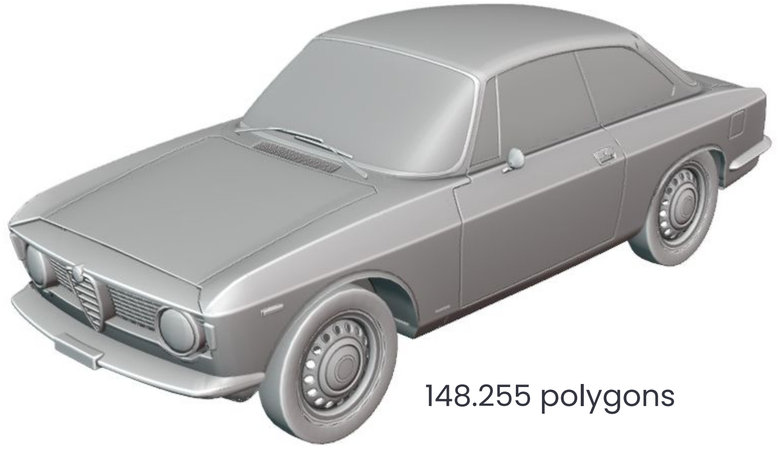
Mesh surfaces:

Tools > Mesh Simplification

Tools > Edit Normals



13.812.517 polygons



148.255 polygons

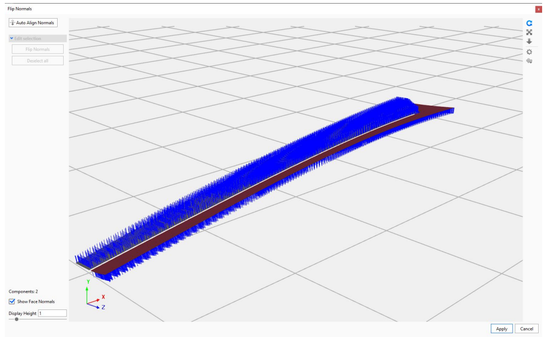
Normals orientation

Real-time engines shade a surface by looking at the surface normal direction. If the normal orientation is not consistent across surfaces, rendering errors may appear.

KeyShot has two tools that must be used in sequence to solve the issue:

Tools > Flip Normals

Tools > Edit Normals

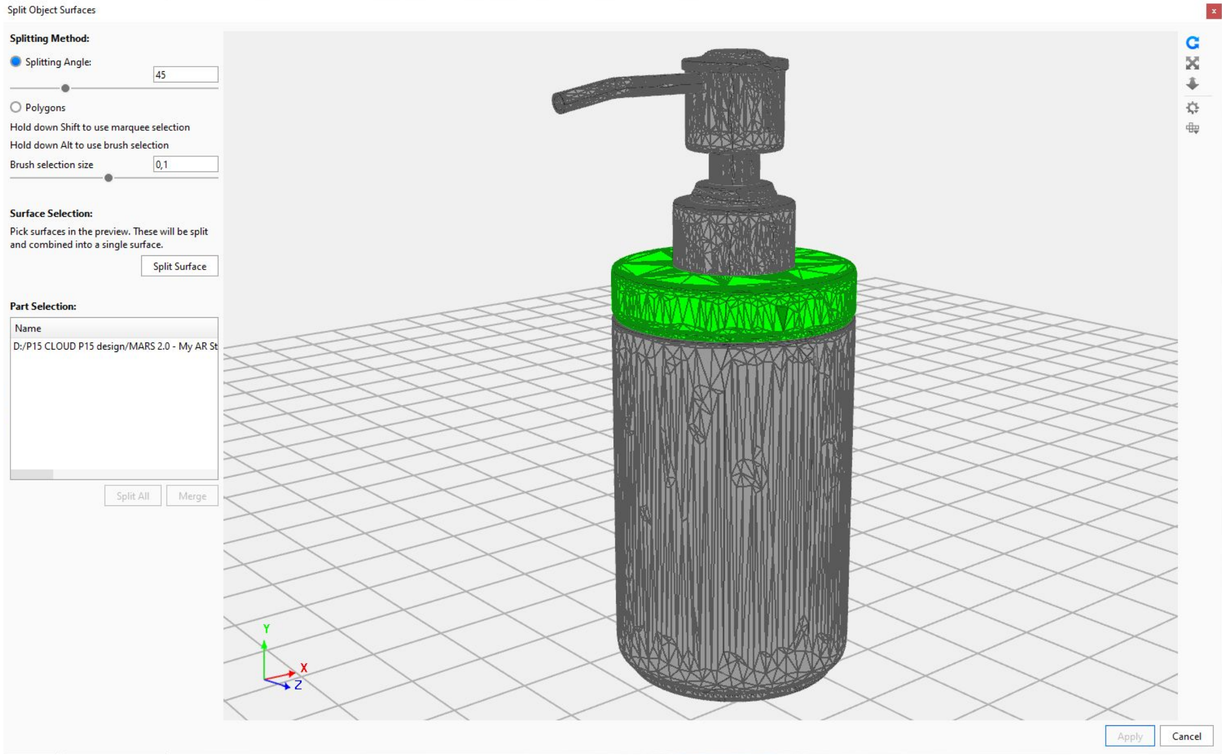


Surface separation

Separate the surfaces of a model to:

- **save weight** in export by hiding non-visible parts
- **assign different materials** to model components

Tools > Split Object Surfaces



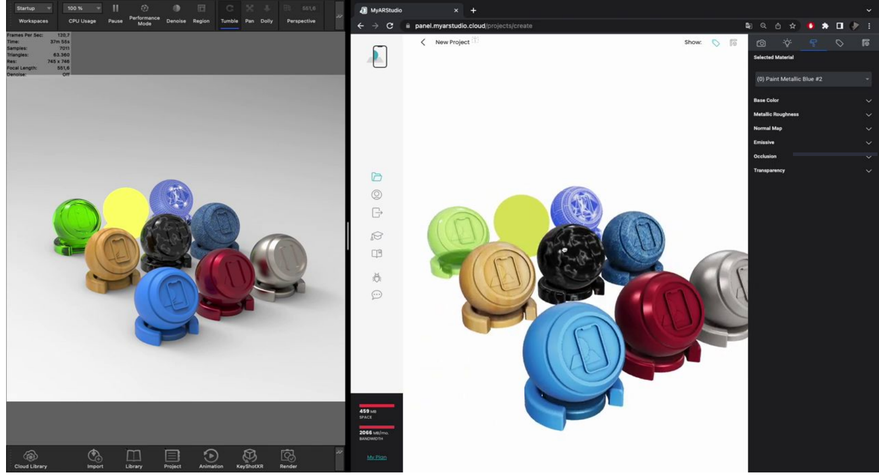
Materials compatibility

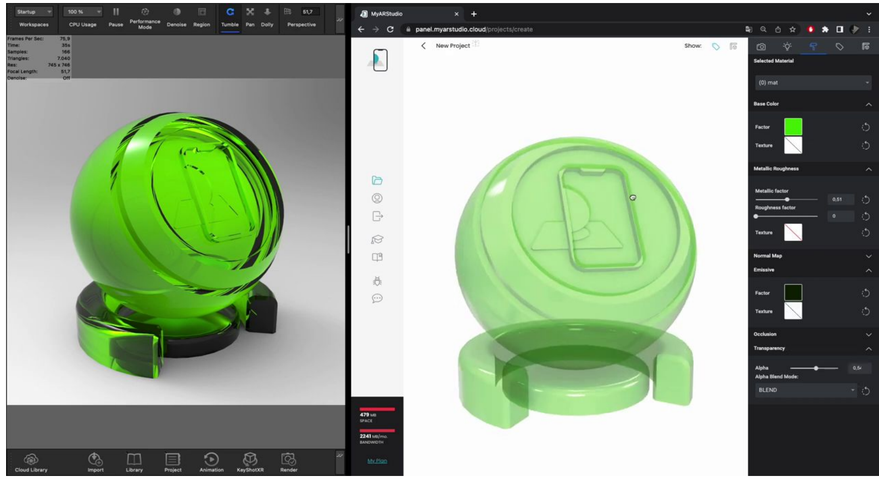
Some types of materials are not exportable from KeyShot: iridescents, volumetrics, and geometry-generating materials.

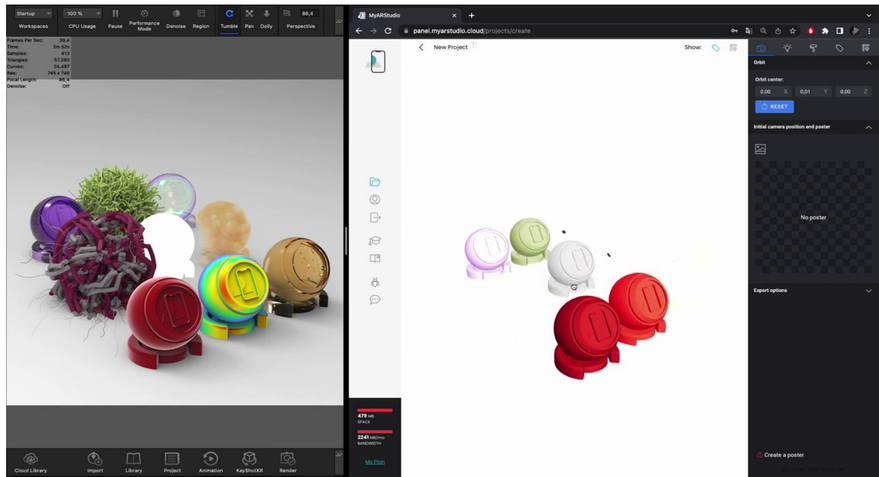
To maintain compatibility with Android and iOS AR engines, transparencies in My AR Studio are rendered without refraction.

https://manual.keyshot.com/manual/models-tab/export/export-formats/

https://www.myarstudio.cloud/learn/documentation/keyshot/keyshot-materials-in-ar/







Real-time rendering

Exporting in GLB with KeyShot

Rendering: Offline vs Real-time

OFFLINE RENDERING

KeyShot

Stills & Animations

Long rendering times

Advanced photorealism

REALTIME RENDERING

My AR Studio

Interactive content

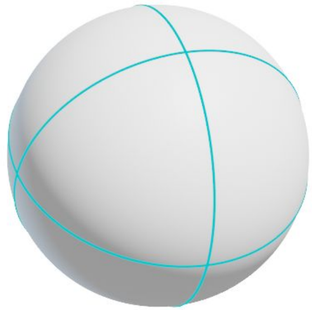
Maximum 1/30 sec per rendering

Limited photorealism

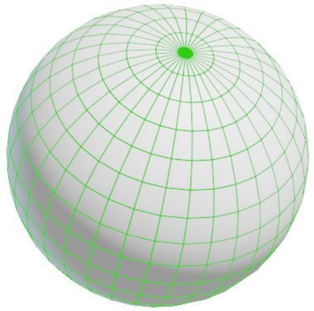
Geometry in real-time

Real-time engines support only mesh geometries.

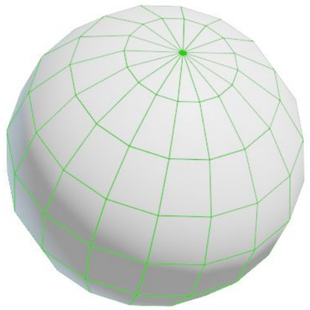
In most software, **NURBS surfaces** are automatically converted to **mesh** at the time of export.



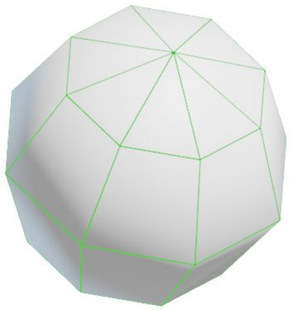
NURBS surface



960 triangles



224 triangles



48 triangles

Real-time materials

Real-time models have a set of **UV** coordinates that allow **textures** to be used to define the characteristics of materials.

The GLB format can use a maximum of 3 textures to define the characteristics of a material.

Color Texture

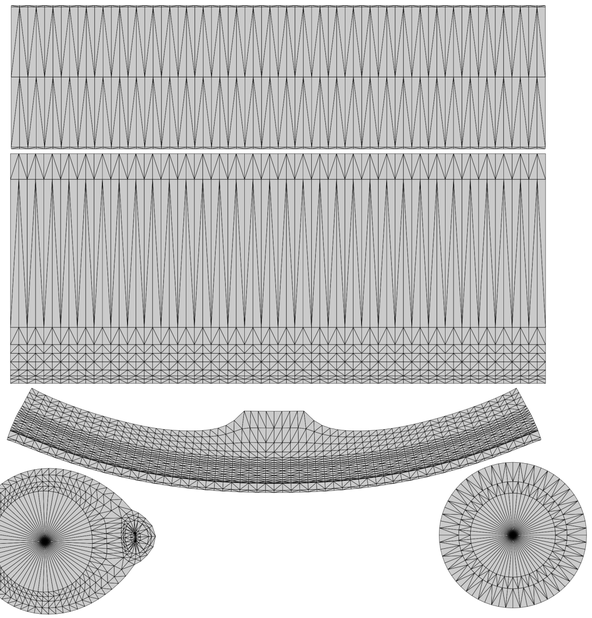
- Color
- Transparency

ORM Texture

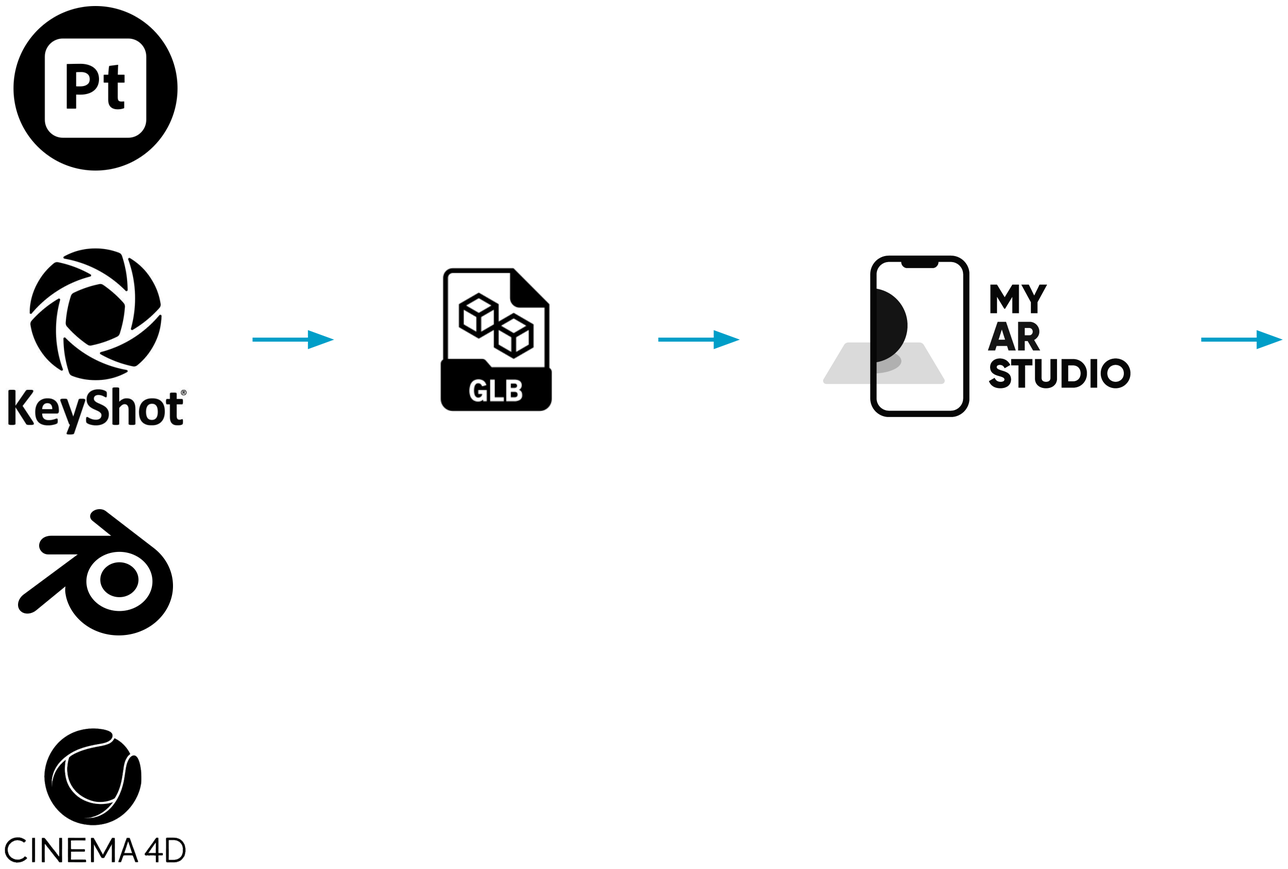
- Occlusion
- Roughness
- Metallicity

Normal Texture

- surface reliefs



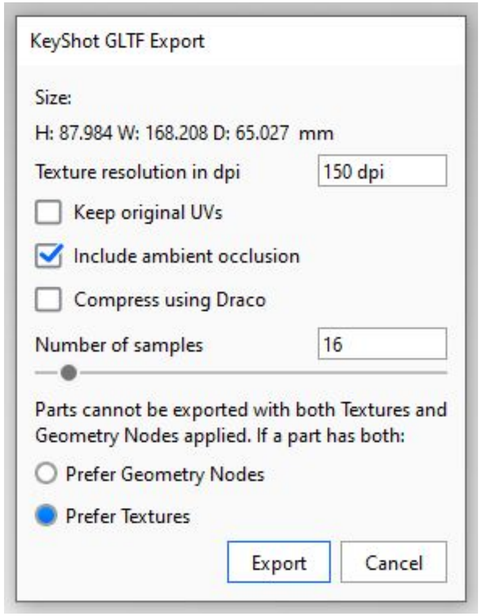
Workflow


Pt
KeyShot
GLB
MY
AR
STUDIO
CINEMA 4D
GLB
USDZ
Android
Web
iOS

Export to GLB

KeyShot will export only visible objects in the scene, hidden objects will be ignored.

File > Export > Export to GLB/GLTF



Export to GLB

The **DPI** parameter determines the size of the exported textures. The higher the DPI value, the more defined and heavy the textures will be.

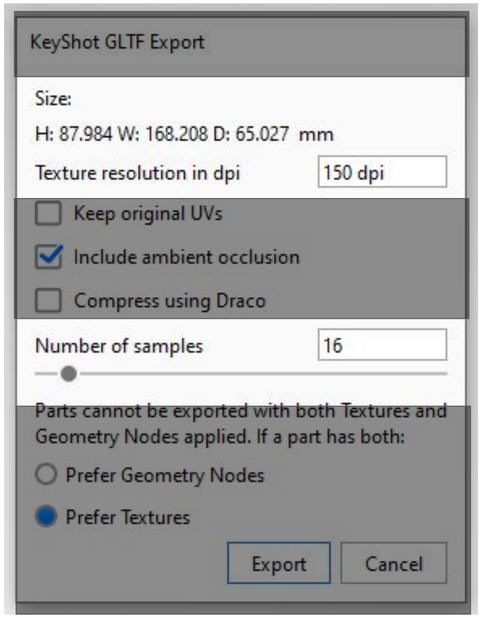
The size of the model also affects the weight of the textures, so it is recommended to set DPI low for large models and vice versa.

Maintain a minimum of 16 **samples** so as not to detract from texture definition.

Click here or use the QR code on the side to see the sphere in **My AR Studio**.

Low DPI

High DPI

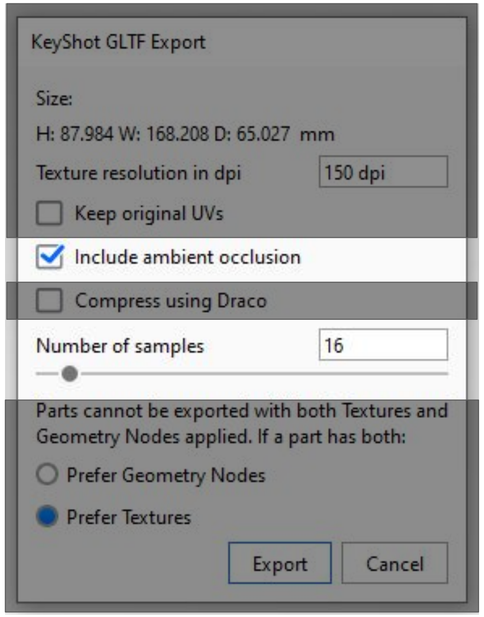


Export to GLB

Activating **Ambient Occlusion** Keyshot will generate a global shading texture for the object.

Increasing the **samples** parameter will increase the quality of the texture, however at the expense of export time.

Click here or use the QR code on the side to see the sphere in **My AR Studio**.



No AO

AO low samples

AO high samples

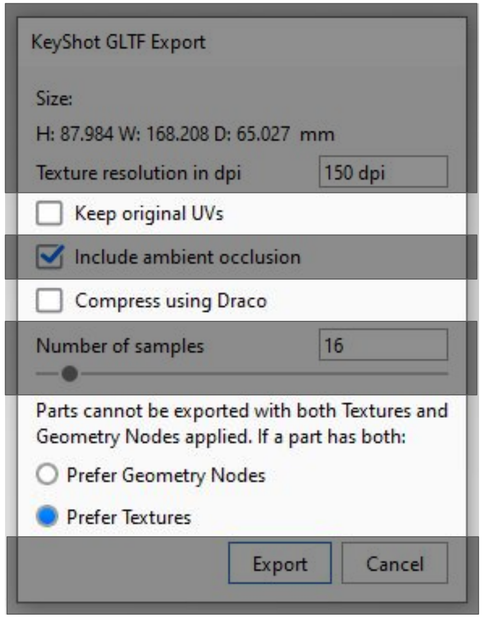
Export to GLB

Latest parameters:

Keep original UVs:
disable it if the model does not already have a set of UV maps

Compress using Draco:
keep always disabled, not used by My AR Studio for compatibility with iOS.

Enable **Prefer Textures**



GLB file weight

Small GLB files are good for two reasons:

- The model **download time** for the end user is shorter
- The model can be displayed with a good framerate on **older smartphones**

Reference sizes:

- **< 5MB** ideal file size
- **< 10MB** good enough
- My AR Studio can display models up to **80MB**

Register

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