**Qt Quick 3D QML Types**

This is the QML frontend for using the spatial renderer and scenegraph. For the time being, all 3D content goes through offscreen textures (FBO)s so that they can be composed into Qt Quick scenes (as a [QQuickItem](../qtquick/qquickitem.html)).

Qt Quick 3D provides the following QML types:

**QtQuick3D QML Types**

Import the QtQuick3D module with the following statement:

**import QtQuick3D 1.15**

|  |  |
| --- | --- |
| [AreaLight](qml-qtquick3d-arealight.html) | Defines an area light in the scene |
| [Blending](qml-qtquick3d-blending.html) | Defines the blending state in a pass of a CustomMaterial or an Effect |
| [Bounds](qml-qtquick3d-bounds.html) | Specifies the bounds of a model |
| [Buffer](qml-qtquick3d-buffer.html) | Defines a buffer to be used for a pass of a CustomMaterial or an Effect |
| [BufferBlit](qml-qtquick3d-bufferblit.html) | Defines a copy operation between two buffers in a pass of a CustomMaterial or an Effect |
| [BufferInput](qml-qtquick3d-bufferinput.html) | Defines an input buffer to be used for a pass of a CustomMaterial or an Effect |
| [Camera](qml-qtquick3d-camera.html) | Defines an abstract base for Cameras |
| [Command](qml-qtquick3d-command.html) | Defines a command to be performed in a pass of a CustomMaterial or an Effect |
| [CullMode](qml-qtquick3d-cullmode.html) | Defines the cull mode for render pass |
| [CustomCamera](qml-qtquick3d-customcamera.html) | Defines a Custom Camera for viewing the content of a 3D scene |
| [DefaultMaterial](qml-qtquick3d-defaultmaterial.html) | Defines a Material generated depending on which properties are set |
| [DepthInput](qml-qtquick3d-depthinput.html) | Defines the output texture for the depth buffer |
| [DirectionalLight](qml-qtquick3d-directionallight.html) | Defines a directional light in the scene |
| [FrustumCamera](qml-qtquick3d-frustumcamera.html) | Defines a Perspective Frustum Camera for viewing the content of a 3D scene |
| [Geometry](qml-qtquick3d-geometry.html) | An Abstract base type for custom geometry |
| [Light](qml-qtquick3d-light.html) | An uncreatable abstract base type for all lights |
| [Loader3D](qml-qtquick3d-loader3d.html) | Allows dynamic loading of a 3D subtree from a URL or Component |
| [Material](qml-qtquick3d-material.html) | Lets you define material for the 3D item |
| [Model](qml-qtquick3d-model.html) | Lets you load a 3D model data |
| [Node](qml-qtquick3d-node.html) | Base component for an object that exists in a 3D Scene |
| [Object3D](qml-qtquick3d-object3d.html) | Abstract base type of all 3D nodes and resources |
| [OrthographicCamera](qml-qtquick3d-orthographiccamera.html) | Defines a Orthographic Camera for viewing the content of a 3D scene |
| [Pass](qml-qtquick3d-pass.html) | Defines a render pass in the CustomMaterial or the Effect |
| [PerspectiveCamera](qml-qtquick3d-perspectivecamera.html) | Defines a Perspective Camera for viewing the content of a 3D scene |
| [PickResult](qml-qtquick3d-pickresult.html) | Contains the results of a pick |
| [PointLight](qml-qtquick3d-pointlight.html) | Defines a point light in the scene |
| [PrincipledMaterial](qml-qtquick3d-principledmaterial.html) | Lets you define a material for 3D items |
| [QuaternionAnimation](qml-qtquick3d-quaternionanimation.html) | A PropertyAnimation for quaternions |
| [RenderState](qml-qtquick3d-renderstate.html) | Defines the render state to be disabled in a pass of a CustomMaterial or an Effect |
| [RenderStats](qml-qtquick3d-renderstats.html) | Provides information of the scene rendering |
| [Repeater3D](qml-qtquick3d-repeater3d.html) | Instantiates a number of Node-based components using a provided model |
| [SceneEnvironment](qml-qtquick3d-sceneenvironment.html) | Lets you configure how a scene is rendered |
| [SetUniformValue](qml-qtquick3d-setuniformvalue.html) | Defines a value to be set during a single pass |
| [Shader](qml-qtquick3d-shader.html) | Container component for defining shader code used by CustomMaterials and Effects |
| [ShaderInfo](qml-qtquick3d-shaderinfo.html) | Defines basic information about custom shader code for CustomMaterials |
| [SpotLight](qml-qtquick3d-spotlight.html) | Defines a spot light in the scene |
| [Texture](qml-qtquick3d-texture.html) | Defines a texture for use in 3D scenes |
| [TextureInput](qml-qtquick3d-textureinput.html) | Defines a texture channel for a Custom Material or an Effect |
| [View3D](qml-qtquick3d-view3d.html) | Provides a viewport on which to render a 3D scene |

**QtQuick3D.Materials QML Types**

Import the QtQuick3D.Materials module with the following statement:

**import QtQuick3D.Materials 1.15**

|  |  |
| --- | --- |
| [AluminumAnodizedEmissiveMaterial](qml-qtquick3d-materials-aluminumanodizedemissivematerial.html) | Anodized aluminum material with emissive properties |
| [AluminumAnodizedMaterial](qml-qtquick3d-materials-aluminumanodizedmaterial.html) | Anodized aluminum material |
| [AluminumBrushedMaterial](qml-qtquick3d-materials-aluminumbrushedmaterial.html) | Brushed aluminum material |
| [AluminumEmissiveMaterial](qml-qtquick3d-materials-aluminumemissivematerial.html) | Aluminum with emissive properties |
| [AluminumMaterial](qml-qtquick3d-materials-aluminummaterial.html) | Aluminum material |
| [CopperMaterial](qml-qtquick3d-materials-coppermaterial.html) | Copper material |
| [CustomMaterial](qml-qtquick3d-materials-custommaterial.html) | Base component for creating custom materials used to shade models |
| [FrostedGlassMaterial](qml-qtquick3d-materials-frostedglassmaterial.html) | Frosted Glass material |
| [FrostedGlassSinglePassMaterial](qml-qtquick3d-materials-frostedglasssinglepassmaterial.html) | Frosted Glass single-pass material |
| [GlassMaterial](qml-qtquick3d-materials-glassmaterial.html) | Glass material |
| [GlassRefractiveMaterial](qml-qtquick3d-materials-glassrefractivematerial.html) | Refractive glass material |
| [PaperArtisticMaterial](qml-qtquick3d-materials-paperartisticmaterial.html) | Artistic paper material |
| [PaperOfficeMaterial](qml-qtquick3d-materials-paperofficematerial.html) | Office paper material |
| [PlasticStructuredRedEmissiveMaterial](qml-qtquick3d-materials-plasticstructuredredemissivematerial.html) | Structured red plastic material with emissive properties |
| [PlasticStructuredRedMaterial](qml-qtquick3d-materials-plasticstructuredredmaterial.html) | Structured red plastic material |
| [SteelMilledConcentricMaterial](qml-qtquick3d-materials-steelmilledconcentricmaterial.html) | Milled concentric steel material |

**import QtQuick3D.Effects 1.15**

|  |  |
| --- | --- |
| [AdditiveColorGradient](qml-qtquick3d-effects-additivecolorgradient.html) | A gradient with additive color effect |
| [Blur](qml-qtquick3d-effects-blur.html) | A one-pass blur effect |
| [BrushStrokes](qml-qtquick3d-effects-brushstrokes.html) | A brush strokes noise effect |
| [ChromaticAberration](qml-qtquick3d-effects-chromaticaberration.html) | A chromatic aberration effect |
| [ColorMaster](qml-qtquick3d-effects-colormaster.html) | A color adjustment effect |
| [DepthOfFieldHQBlur](qml-qtquick3d-effects-depthoffieldhqblur.html) | A depth-based blur effect |
| [Desaturate](qml-qtquick3d-effects-desaturate.html) | A desaturating effect |
| [DistortionRipple](qml-qtquick3d-effects-distortionripple.html) | A ripple distortion effect |
| [DistortionSphere](qml-qtquick3d-effects-distortionsphere.html) | A sphere distortion effect |
| [DistortionSpiral](qml-qtquick3d-effects-distortionspiral.html) | A spiral distortion effect |
| [EdgeDetect](qml-qtquick3d-effects-edgedetect.html) | An edge highlighting effect |
| [Effect](qml-qtquick3d-effects-effect.html) | Base component for creating a post-processing effect |
| [Emboss](qml-qtquick3d-effects-emboss.html) | An emboss effect |
| [Flip](qml-qtquick3d-effects-flip.html) | A scene flipping effect |
| [Fxaa](qml-qtquick3d-effects-fxaa.html) | A fast approximate anti-aliasing effect |
| [GaussianBlur](qml-qtquick3d-effects-gaussianblur.html) | A two-pass gaussian blur effect |
| [HDRBloomTonemap](qml-qtquick3d-effects-hdrbloomtonemap.html) | A bloom with tonemapping effect |
| [MotionBlur](qml-qtquick3d-effects-motionblur.html) | A motion blur effect |
| [SCurveTonemap](qml-qtquick3d-effects-scurvetonemap.html) | A tonemapping effect |
| [Scatter](qml-qtquick3d-effects-scatter.html) | A scatter noise effect |
| [TiltShift](qml-qtquick3d-effects-tiltshift.html) | A tilt shift blur effect |
| [Vignette](qml-qtquick3d-effects-vignette.html) | A vignette effect |

**QtQuick3D.Helpers QML Types**

Import the QtQuick3D.Helpers module with the following statement:

**import QtQuick3D.Helpers 1.15**

|  |  |
| --- | --- |
| [AxisHelper](qml-qtquick3d-helpers-axishelper.html) | Visual helper for showing axis in 3D scene |
| [DebugView](qml-qtquick3d-helpers-debugview.html) | View to show render statistics |
| [GridGeometry](qml-qtquick3d-helpers-gridgeometry.html) | Visual helper for showing grid in a scene |
| [WasdController](qml-qtquick3d-helpers-wasdcontroller.html) | Control node position and orientation with keys and mouse |