RenderSettings(bpy_struct)

base class — bpy_struct

class bpy.types.**RenderSettings(bpy_struct)**

Rendering settings for a Scene data-block

bake

TYPE:

BakeSettings, (readonly, never None)

bake_bias

Bias towards faces further away from the object (in Blender units)

TYPE:

float in [0, 1000], default 0.001

bake_margin

Extends the baked result as a post process filter

TYPE:

int in [0, 64], default 16

bake_margin_type

Algorithm to generate the margin

- ADJACENT_FACES Adjacent Faces – Use pixels from adjacent faces across UV seams.
- EXTEND Extend – Extend border pixels outwards.

TYPE:

enum in ['ADJACENT_FACES', 'EXTEND'], default 'ADJACENT_FACES'

bake_samples

Number of samples used for ambient occlusion baking from multires

TYPE:

int in [64, 1024], default 256

bake_type

Choose shading information to bake into the image

- NORMALS Normals – Bake normals.
- DISPLACEMENT Displacement – Bake displacement.

TYPE:

enum in ['NORMALS', 'DISPLACEMENT'], default 'NORMALS'

bake_user_scale

Instead of automatically normalizing to the range 0 to 1, apply a user scale to the derivative map

TYPE:

float in [0, 1000], default 0.0

border_max_x

Maximum X value for the render region

TYPE:

float in [0, 1], default 1.0

border_max_y

Maximum Y value for the render region

TYPE:

float in [0, 1], default 1.0

border_min_x

Minimum X value for the render region

TYPE:

float in [0, 1], default 0.0

border_min_y

Minimum Y value for the render region

TYPE:

float in [0, 1], default 0.0

compositor_denoise_final_quality

The quality used by denoise nodes during the compositing of final renders if the nodes' quality option is set to Follow Scene

- `HIGH` High – High quality.
- `BALANCED` Balanced – Balanced between performance and quality.
- `FAST` Fast – High perfomance.

TYPE:

enum in ['HIGH', 'BALANCED', 'FAST'], default 'HIGH'

compositor_denoise_preview_quality

The quality used by denoise nodes during viewport and interactive compositing if the nodes' quality option is set to Follow Scene

- `HIGH` High – High quality.
- `BALANCED` Balanced – Balanced between performance and quality.
- `FAST` Fast – High perfomance.

TYPE:

enum in ['HIGH', 'BALANCED', 'FAST'], default 'BALANCED'

compositor_device

Set how compositing is executed

TYPE:

enum in ['CPU', 'GPU'], default 'CPU'

compositor_precision

The precision of compositor intermediate result

- `AUTO` Auto – Full precision for final renders, half precision otherwise.
- `FULL` Full – Full precision.

TYPE:

enum in ['AUTO', 'FULL'], default 'AUTO'

dither_intensity

Amount of dithering noise added to the rendered image to break up banding

TYPE:

float in [0, inf], default 1.0

engine

Engine to use for rendering

TYPE:

enum in ['BLENDER_EEVEE_NEXT'], default 'BLENDER_EEVEE_NEXT'

ffmpeg

FFmpeg related settings for the scene

TYPE:

FFmpegSettings, (readonly)

file_extension

The file extension used for saving renders

TYPE:

string, default "", (readonly, never None)

filepath

Directory/name to save animations, # characters define the position and padding of frame numbers

TYPE:

string, default "", (never None)

film_transparent

World background is transparent, for compositing the render over another background

TYPE:

boolean, default False

filter_size

Width over which the reconstruction filter combines samples

TYPE:

float in [0, 500], default 1.5

fps

Framerate, expressed in frames per second

TYPE:

int in [1, 32767], default 24

fps_base

Framerate base

TYPE:

float in [1e-05, 1e+06], default 1.0

frame_map_new

How many frames the Map Old will last

TYPE:

int in [1, 900], default 100

frame_map_old

Old mapping value in frames

TYPE:

int in [1, 900], default 100

hair_subdiv

Additional subdivision along the curves

TYPE:

int in [0, 3], default 0

hair_type

Curves shape type

TYPE:

enum in [‘STRAND’, ‘STRIP’], default ‘STRAND’

has_multiple_engines

More than one rendering engine is available

TYPE:

boolean, default False, (readonly)

image_settings

TYPE:

`ImageFormatSettings`, (readonly, never None)

is_movie_format

When true the format is a movie

TYPE:

boolean, default False, (readonly)

line_thickness

Line thickness in pixels

TYPE:

float in [0, 10000], default 1.0

line_thickness_mode

Line thickness mode for Freestyle line drawing

- `ABSOLUTE` Absolute – Specify unit line thickness in pixels.
- `RELATIVE` Relative – Unit line thickness is scaled by the proportion of the present vertical image resolution to 480 pixels.

TYPE:

enum in [‘ABSOLUTE’, ‘RELATIVE’], default ‘ABSOLUTE’

metadata_input

Where to take the metadata from

- `SCENE` Scene – Use metadata from the current scene.
- `STRIPS` Sequencer Strips – Use metadata from the strips in the sequencer.

TYPE:

enum in [‘SCENE’, ‘STRIPS’], default ‘SCENE’

motion_blur_position

Offset for the shutter's time interval, allows to change the motion blur trails

- `START` Start on Frame – The shutter opens at the current frame.
- `CENTER` Center on Frame – The shutter is open during the current frame.
- `END` End on Frame – The shutter closes at the current frame.

TYPE:

enum in ['START', 'CENTER', 'END'], default 'CENTER'

motion_blur_shutter

Time taken in frames between shutter open and close

TYPE:

float in [0, inf], default 0.5

motion_blur_shutter_curve

Curve defining the shutter's openness over time

TYPE:

`CurveMapping`, (readonly)

pixel_aspect_x

Horizontal aspect ratio - for anamorphic or non-square pixel output

TYPE:

float in [1, 200], default 1.0

pixel_aspect_y

Vertical aspect ratio - for anamorphic or non-square pixel output

TYPE:

float in [1, 200], default 1.0

preview_pixel_size

Pixel size for viewport rendering

- `AUTO` Automatic – Automatic pixel size, depends on the user interface scale.
- `1` 1× – Render at full resolution.
- `2` 2× – Render at 50% resolution.
- `4` 4× – Render at 25% resolution.
- `8` 8× – Render at 12.5% resolution.

TYPE:

enum in ['AUTO', '1', '2', '4', '8'], default 'AUTO'

resolution_percentage

Percentage scale for render resolution

TYPE:

int in [1, 32767], default 100

resolution_x

Number of horizontal pixels in the rendered image

TYPE:

int in [4, 65536], default 1920

resolution_y

Number of vertical pixels in the rendered image

TYPE:

int in [4, 65536], default 1080

sequencer_gl_preview

Display method used in the sequencer view

TYPE:

enum in Shading Type Items, default ‘SOLID’

simplify_child_particles

Global child particles percentage

TYPE:

float in [0, 1], default 1.0

simplify_child_particles_render

Global child particles percentage during rendering

TYPE:

float in [0, 1], default 0.0

simplify_gpencil

Simplify Grease Pencil drawing

TYPE:

boolean, default False

simplify_gpencil_antialiasing

Use Antialiasing to smooth stroke edges

TYPE:

boolean, default True

simplify_gpencil_modifier

Display modifiers

TYPE:

boolean, default True

simplify_gpencil_onplay

Simplify Grease Pencil only during animation playback

TYPE:

boolean, default False

simplify_gpencil_shader_fx

Display Shader Effects

TYPE:

boolean, default True

simplify_gpencil_tint

Display layer tint

TYPE:

TYPE:

boolean, default True

simplify_gpencil_view_fill

Display fill strokes in the viewport

TYPE:

boolean, default True

simplify_subdivision

Global maximum subdivision level

TYPE:

int in [0, 32767], default 6

simplify_subdivision_render

Global maximum subdivision level during rendering

TYPE:

int in [0, 32767], default 0

simplify_volumes

Resolution percentage of volume objects in viewport

TYPE:

float in [0, 1], default 1.0

stamp_background

Color to use behind stamp text

TYPE:

float array of 4 items in [0, 1], default (0.0, 0.0, 0.0, 0.25)

stamp_font_size

Size of the font used when rendering stamp text

TYPE:

int in [8, 64], default 12

stamp_foreground

Color to use for stamp text

TYPE:

float array of 4 items in [0, 1], default (0.8, 0.8, 0.8, 1.0)

stamp_note_text

Custom text to appear in the stamp note

TYPE:

string, default “”, (never None)

stereo_views

TYPE:

`bpy_prop_collection` of `SceneRenderView`, (readonly)

threads

Maximum number of CPU cores to use simultaneously while rendering (for multi-core/CPU systems)

TYPE:

int in [1, 1024], default 1

threads_mode

Determine the amount of render threads used

- `AUTO` Auto-Detect – Automatically determine the number of threads, based on CPUs.
- `FIXED` Fixed – Manually determine the number of threads.

TYPE:

enum in ['AUTO', 'FIXED'], default 'AUTO'

use_bake_clear

Clear Images before baking

TYPE:

boolean, default True

use_bake_lores_mesh

Calculate heights against unsubdivided low resolution mesh

TYPE:

boolean, default False

use_bake_multires

Bake directly from multires object

TYPE:

boolean, default False

use_bake_selected_to_active

Bake shading on the surface of selected objects to the active object

TYPE:

boolean, default False

use_bake_user_scale

Use a user scale for the derivative map

TYPE:

boolean, default False

use_border

Render a user-defined render region, within the frame size

TYPE:

boolean, default False

use_compositing

Process the render result through the compositing pipeline, if compositing nodes are enabled

TYPE:

boolean, default True

use_crop_to_border

Crop the rendered frame to the defined render region size

TYPE:

boolean, default False

use_file_extension

Add the file format extensions to the rendered file name (eg: filename + .jpg)

TYPE:

boolean, default True

use_freestyle

Draw stylized strokes using Freestyle

TYPE:

boolean, default False

use_high_quality_normals

Use high quality tangent space at the cost of lower performance

TYPE:

boolean, default False

use_lock_interface

Lock interface during rendering in favor of giving more memory to the renderer

TYPE:

boolean, default False

use_motion_blur

Use multi-sampled 3D scene motion blur

TYPE:

boolean, default False

use_multiview

Use multiple views in the scene

TYPE:

boolean, default False

use_overwrite

Overwrite existing files while rendering

TYPE:

boolean, default True

use_persistent_data

Keep render data around for faster re-renders and animation renders, at the cost of increased memory usage

TYPE:

boolean, default False

use_placeholder

Create empty placeholder files while rendering frames (similar to Unix 'touch')

TYPE:

boolean, default False

use_render_cache

Save render cache to EXR files (useful for heavy compositing, Note: affects indirectly rendered scenes)

TYPE:

boolean, default False

use_sequencer

Process the render (and composited) result through the video sequence editor pipeline, if sequencer strips exist

TYPE:

boolean, default True

use_sequencer_override_scene_strip

Use workbench render settings from the sequencer scene, instead of each individual scene used in the strip

TYPE:

boolean, default False

use_simplify

Enable simplification of scene for quicker preview renders

TYPE:

boolean, default False

use_simplify_normals

Skip computing custom normals and face corner normals for displaying meshes in the viewport

TYPE:

boolean, default False

use_single_layer

Only render the active layer. Only affects rendering from the interface, ignored for rendering from command line.

TYPE:

boolean, default False

use_spherical_stereo

Active render engine supports spherical stereo rendering

TYPE:

boolean, default False, (readonly)

use_stamp

Render the stamp info text in the rendered image

TYPE:

boolean, default False

use_stamp_camera

Include the name of the active camera in image metadata

TYPE:

boolean, default True

use_stamp_date

Include the current date in image/video metadata

TYPE:

boolean, default True

use_stamp_filename

use_stamp_filename

Include the .blend filename in image/video metadata

TYPE:

boolean, default True

use_stamp_frame

Include the frame number in image metadata

TYPE:

boolean, default True

use_stamp_frame_range

Include the rendered frame range in image/video metadata

TYPE:

boolean, default False

use_stamp_hostname

Include the hostname of the machine that rendered the frame

TYPE:

boolean, default False

use_stamp_labels

Display stamp labels (“Camera” in front of camera name, etc.)

TYPE:

boolean, default True

use_stamp_lens

Include the active camera’s lens in image metadata

TYPE:

boolean, default False

use_stamp_marker

Include the name of the last marker in image metadata

TYPE:

boolean, default False

use_stamp_memory

Include the peak memory usage in image metadata

TYPE:

boolean, default True

use_stamp_note

Include a custom note in image/video metadata

TYPE:

boolean, default False

use_stamp_render_time

Include the render time in image metadata

TYPE:

boolean, default True

boolean, default True

use_stamp_scene

Include the name of the active scene in image/video metadata

TYPE:

boolean, default True

use_stamp_sequencer_strip

Include the name of the foreground sequence strip in image metadata

TYPE:

boolean, default False

use_stamp_time

Include the rendered frame timecode as HH:MM:SS.FF in image metadata

TYPE:

boolean, default True

views

TYPE:

`RenderViews bpy_prop_collection` of `SceneRenderView`, (readonly)

views_format

- `STEREO_3D` Stereo 3D – Single stereo camera system, adjust the stereo settings in the camera panel.
- `MULTIVIEW` Multi-View – Multi camera system, adjust the cameras individually.

TYPE:

enum in ['STEREO_3D', 'MULTIVIEW'], default 'STEREO_3D'

frame_path(*, frame=-2147483648, preview=False, view='')

Return the absolute path to the filename to be written for a given frame

PARAMETERS:

- **frame** (*int in [-inf, inf], (optional)*) – Frame number to use, if unset the current frame will be used
- **preview** (*boolean, (optional)*) – Preview, Use preview range
- **view** (*string, (optional, never None)*) – View, The name of the view to use to replace the "%" chars

RETURNS:

File Path, The resulting filepath from the scenes render settings

RETURN TYPE:

string, (never None)

classmethod bl_rna_get_subclass(id, default=None)

PARAMETERS:

id (*str*) – The RNA type identifier.

RETURNS:

The RNA type or default when not found.

RETURN TYPE:

`bpy.types.Struct` subclass

classmethod bl_rna_get_subclass_py(id, default=None)

PARAMETERS:

id (*str*) – The RNA type identifier.

RETURNS:

The class or default when not found.

RETURN TYPE:

type

Inherited Properties

- bpy_struct.id_data

Inherited Functions

- bpy_struct.as_pointer
- bpy_struct.driver_add
- bpy_struct.driver_remove
- bpy_struct.get
- bpy_struct.id_properties_clear
- bpy_struct.id_properties_ensure
- bpy_struct.id_properties_ui
- bpy_struct.is_property_hidden
- bpy_struct.is_property_overridable_library
- bpy_struct.is_property_readonly
- bpy_struct.is_property_set
- bpy_struct.items
- bpy_struct.keyframe_delete
- bpy_struct.keyframe_insert
- bpy_struct.keys
- bpy_struct.path_from_id
- bpy_struct.path_resolve
- bpy_struct.pop
- bpy_struct.property_overridable_library_set
- bpy_struct.property_unset
- bpy_struct.type_recast
- bpy_struct.values

References

- RenderEngine.render
- Scene.render