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# ShaderNodeBlackbody(ShaderNode)

base classes — [bpy\\_struct](#) , [Node](#) , [NodeInternal](#) , [ShaderNode](#)

**class** `bpy.types.ShaderNodeBlackbody(ShaderNode)`

Convert a blackbody temperature to an RGB value

**classmethod** `is_registered_node_type()`

True if a registered node type

**RETURNS:**

Result

**RETURN TYPE:**

boolean

**classmethod** `input_template(index)`

Input socket template

**PARAMETERS:**

**index** (*int* in  $[0, \infty]$ ) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**classmethod** `output_template(index)`

Output socket template

**PARAMETERS:**

**index** (*int* in  $[0, \infty]$ ) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.socket_value_update`
- `Node.is_registered_node_type`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`
- `NodeInternal.draw_buttons_ext`
- `NodeInternal.bl_rna_get_subclass`
- `NodeInternal.bl_rna_get_subclass_py`
- `ShaderNode.poll`
- `ShaderNode.bl_rna_get_subclass`

- [Node.poll](#)

- [ShaderNode.bl\\_rna\\_get\\_subclass\\_py](#)

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# ShaderNodeTexImage(ShaderNode)

base classes — [bpy\\_struct](#), [Node](#), [NodeInternal](#), [ShaderNode](#)

**class** bpy.types.ShaderNodeTexImage(ShaderNode)

Sample an image file as a texture

## color\_mapping

Color mapping settings

### TYPE:

[ColorMapping](#), (readonly, never None)

## extension

How the image is extrapolated past its original bounds

- **REPEAT** Repeat – Cause the image to repeat horizontally and vertically.
- **EXTEND** Extend – Extend by repeating edge pixels of the image.
- **CLIP** Clip – Clip to image size and set exterior pixels as transparent.
- **MIRROR** Mirror – Repeatedly flip the image horizontally and vertically.

### TYPE:

enum in ['REPEAT', 'EXTEND', 'CLIP', 'MIRROR'], default 'REPEAT'

## image

### TYPE:

[Image](#)

## image\_user

Parameters defining which layer, pass and frame of the image is displayed

### TYPE:

[ImageUser](#), (readonly, never None)

## interpolation

Texture interpolation

- **Linear** Linear – Linear interpolation.
- **Closest** Closest – No interpolation (sample closest texel).
- **Cubic** Cubic – Cubic interpolation.
- **Smart** Smart – Bicubic when magnifying, else bilinear (OSL only).

### TYPE:

enum in ['Linear', 'Closest', 'Cubic', 'Smart'], default 'Linear'

## projection

Method to project 2D image on object with a 3D texture vector

- **FLAT** Flat – Image is projected flat using the X and Y coordinates of the texture vector.
- **BOX** Box – Image is projected using different components for each side of the object space bounding box.
- **SPHERE** Sphere – Image is projected spherically using the Z axis as central.
- **TUBE** Tube – Image is projected from the tube using the Z axis as central.

### TYPE:

enum in ['FLAT', 'BOX', 'SPHERE', 'TUBE'], default 'FLAT'

## **projection\_blend**

For box projection, amount of blend to use between sides

### **TYPE:**

float in [0, 1], default 0.0

## **texture\_mapping**

Texture coordinate mapping settings

### **TYPE:**

`TexMapping`, (readonly, never None)

## **classmethod is\_registered\_node\_type()**

True if a registered node type

### **RETURNS:**

Result

### **RETURN TYPE:**

boolean

## **classmethod input\_template(index)**

Input socket template

### **PARAMETERS:**

**index** (*int in [0, inf]*) – Index

### **RETURNS:**

result

### **RETURN TYPE:**

`NodeInternalSocketTemplate`

## **classmethod output\_template(index)**

Output socket template

### **PARAMETERS:**

**index** (*int in [0, inf]*) – Index

### **RETURNS:**

result

### **RETURN TYPE:**

`NodeInternalSocketTemplate`

## **classmethod bl\_ma\_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\_ma\_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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`
- `NodeInternal.draw_buttons_ext`
- `NodeInternal.bl_rna_get_subclass`



- `bpy_struct.type_recast`
- `bpy_struct.values`
- `Node.socket_value_update`
- `Node.is_registered_node_type`
- `Node.poll`

- `NodeInternal.bl_rna_get_subclass_py`
- `ShaderNode.poll`
- `ShaderNode.bl_rna_get_subclass`
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# ShaderNodeTexMagic(ShaderNode)

base classes — [bpy\\_struct](#) , [Node](#) , [NodeInternal](#) , [ShaderNode](#)

**class** bpy.types.ShaderNodeTexMagic(ShaderNode)

Generate a psychedelic color texture

## color\_mapping

Color mapping settings

### TYPE:

[ColorMapping](#) , (readonly, never None)

## texture\_mapping

Texture coordinate mapping settings

### TYPE:

[TexMapping](#) , (readonly, never None)

## turbulence\_depth

Level of detail in the added turbulent noise

### TYPE:

int in [0, 10], default 0

**classmethod** is\_registered\_node\_type()

True if a registered node type

### RETURNS:

Result

### RETURN TYPE:

boolean

**classmethod** input\_template(index)

Input socket template

### PARAMETERS:

**index** (*int in [0, inf]*) – Index

### RETURNS:

result

### RETURN TYPE:

[NodeInternalSocketTemplate](#)

**classmethod** output\_template(index)

Output socket template

### PARAMETERS:

**index** (*int in [0, inf]*) – Index

### RETURNS:

result

### RETURN TYPE:

[NodeInternalSocketTemplate](#)

**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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`

- `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`
- `Node.socket_value_update`
- `Node.is_registered_node_type`
- `Node.poll`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`
- `NodeInternal.draw_buttons_ext`
- `NodeInternal.bl_rna_get_subclass`
- `NodeInternal.bl_rna_get_subclass_py`
- `ShaderNode.poll`
- `ShaderNode.bl_rna_get_subclass`
- `ShaderNode.bl_rna_get_subclass_py`

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# ShaderNodeTexNoise(ShaderNode)

base classes — [bpy\\_struct](#) , [Node](#) , [NodeInternal](#) , [ShaderNode](#)

**class** bpy.types.**ShaderNodeTexNoise**(ShaderNode)

Generate fractal Perlin noise

## color\_mapping

Color mapping settings

### TYPE:

[ColorMapping](#) , (readonly, never None)

## noise\_dimensions

Number of dimensions to output noise for

- 1D 1D – Use the scalar value W as input.
- 2D 2D – Use the 2D vector (X, Y) as input. The Z component is ignored..
- 3D 3D – Use the 3D vector (X, Y, Z) as input.
- 4D 4D – Use the 4D vector (X, Y, Z, W) as input.

### TYPE:

enum in ['1D', '2D', '3D', '4D'], default '1D'

## noise\_type

Type of the Noise texture

- MULTIFRACTAL Multifractal – More uneven result (varies with location), more similar to a real terrain.
- RIDGED\_MULTIFRACTAL Ridged Multifractal – Create sharp peaks.
- HYBRID\_MULTIFRACTAL Hybrid Multifractal – Create peaks and valleys with different roughness values.
- FBM fBM – The standard fractal Perlin noise.
- HETERO\_TERRAIN Hetero Terrain – Similar to Hybrid Multifractal creates a heterogeneous terrain, but with the likeness of river channels.

### TYPE:

enum in ['MULTIFRACTAL', 'RIDGED\_MULTIFRACTAL', 'HYBRID\_MULTIFRACTAL', 'FBM', 'HETERO\_TERRAIN'], default 'MULTIFRACTAL'

## normalize

Normalize outputs to 0.0 to 1.0 range

### TYPE:

boolean, default False

## texture\_mapping

Texture coordinate mapping settings

### TYPE:

[TexMapping](#) , (readonly, never None)

**classmethod** **is\_registered\_node\_type**()

True if a registered node type

### RETURNS:

Result

**RETURN TYPE:**

boolean

**classmethod input\_template(index)**

Input socket template

**PARAMETERS:**

**index** (*int in [0, inf]*) – Index

**RETURNS:**

result

**RETURN TYPE:**

`NodeInternalSocketTemplate`

**classmethod output\_template(index)**

Output socket template

**PARAMETERS:**

**index** (*int in [0, inf]*) – Index

**RETURNS:**

result

**RETURN TYPE:**

`NodeInternalSocketTemplate`

**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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`

- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.socket_value_update`
- `Node.is_registered_node_type`
- `Node.poll`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`
- `NodeInternal.draw_buttons_ext`
- `NodeInternal.bl_rna_get_subclass`
- `NodeInternal.bl_rna_get_subclass_py`
- `ShaderNode.poll`
- `ShaderNode.bl_rna_get_subclass`
- `ShaderNode.bl_rna_get_subclass_py`

# ShaderNodeTexPointDensity(ShaderNode)

base classes — [bpy\\_struct](#), [Node](#), [NodeInternal](#), [ShaderNode](#)

**class** bpy.types.**ShaderNodeTexPointDensity(ShaderNode)**

Generate a volumetric point for each particle or vertex of another object

## interpolation

Texture interpolation

- `Closest` Closest – No interpolation (sample closest texel).
- `Linear` Linear – Linear interpolation.
- `Cubic` Cubic – Cubic interpolation.

## TYPE:

enum in ['Closest', 'Linear', 'Cubic'], default 'Linear'

## object

Object to take point data from

## TYPE:

[Object](#)

## particle\_color\_source

Data to derive color results from

- `PARTICLE_AGE` Particle Age – Lifetime mapped as 0.0 to 1.0 intensity.
- `PARTICLE_SPEED` Particle Speed – Particle speed (absolute magnitude of velocity) mapped as 0.0 to 1.0 intensity.
- `PARTICLE_VELOCITY` Particle Velocity – XYZ velocity mapped to RGB colors.

## TYPE:

enum in ['PARTICLE\_AGE', 'PARTICLE\_SPEED', 'PARTICLE\_VELOCITY'], default 'PARTICLE\_AGE'

## particle\_system

Particle System to render as points

## TYPE:

[ParticleSystem](#)

## point\_source

Point data to use as renderable point density

- `PARTICLE_SYSTEM` Particle System – Generate point density from a particle system.
- `OBJECT` Object Vertices – Generate point density from an object's vertices.

## TYPE:

enum in ['PARTICLE\_SYSTEM', 'OBJECT'], default 'PARTICLE\_SYSTEM'

## radius

Radius from the shaded sample to look for points within

## TYPE:

float in [0.001, inf], default 0.0

## resolution

Resolution used by the texture holding the point density



**TYPE:**

int in [1, 32768], default 0

**space**

Coordinate system to calculate voxels in

**TYPE:**

enum in ['OBJECT', 'WORLD'], default 'OBJECT'

**vertex\_attribute\_name**

Vertex attribute to use for color

**TYPE:**

string, default '', (never None)

**vertex\_color\_source**

Data to derive color results from

- VERTEX\_COLOR Vertex Color – Vertex color layer.
- VERTEX\_WEIGHT Vertex Weight – Vertex group weight.
- VERTEX\_NORMAL Vertex Normal – XYZ normal vector mapped to RGB colors.

**TYPE:**

enum in ['VERTEX\_COLOR', 'VERTEX\_WEIGHT', 'VERTEX\_NORMAL'], default 'VERTEX\_COLOR'

**classmethod is\_registered\_node\_type()**

True if a registered node type

**RETURNS:**

Result

**RETURN TYPE:**

boolean

**classmethod input\_template(index)**

Input socket template

**PARAMETERS:**

**index** (*int in [0, inf]*) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**classmethod output\_template(index)**

Output socket template

**PARAMETERS:**

**index** (*int in [0, inf]*) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**cache\_point\_density(\*, depsgraph=None)**

Cache point density data for later calculation

**calc\_point\_density(\*, depsgraph=None)**

Calculate point density

**RETURNS:**

RGBA Values

**RETURN TYPE:**

float array of 1 items in  $[-inf, inf]$

**calc\_point\_density\_minmax(\*, depsgraph=None)**

Calculate point density

**RETURNS:**

*min*, min, `mathutils.Vector` of 3 items in  $[-inf, inf]$

*max*, max, `mathutils.Vector` of 3 items in  $[-inf, inf]$

**RETURN TYPE:**

(`mathutils.Vector` of 3 items in  $[-inf, inf]$ , `mathutils.Vector` of 3 items in  $[-inf, inf]$ )

**classmethod bl\_ma\_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\_ma\_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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl width default`

- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.socket_value_update`
- `Node.is_registered_node_type`
- `Node.poll`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`
- `NodeInternal.draw_buttons_ext`
- `NodeInternal.bl_rna_get_subclass`
- `NodeInternal.bl_rna_get_subclass_py`
- `ShaderNode.poll`
- `ShaderNode.bl_rna_get_subclass`
- `ShaderNode.bl_rna_get_subclass_py`

[Skip to content](#)

# ShaderNodeTexSky(ShaderNode)

base classes — [bpy\\_struct](#), [Node](#), [NodeInternal](#), [ShaderNode](#)

**class** bpy.types.**ShaderNodeTexSky**(**ShaderNode**)

Generate a procedural sky texture

## **air\_density**

Density of air molecules. • 0 - No air. • 1 - Clear day atmosphere. • 2 - Highly polluted day

### **TYPE:**

float in [0, 10], default 1.0

## **altitude**

Height from sea level

### **TYPE:**

float in [0, 60000], default 0.0

## **color\_mapping**

Color mapping settings

### **TYPE:**

[ColorMapping](#), (readonly, never None)

## **dust\_density**

Density of dust molecules and water droplets. • 0 - No dust. • 1 - Clear day atmosphere. • 5 - City like atmosphere. • 10 - Hazy day

### **TYPE:**

float in [0, 10], default 1.0

## **ground\_albedo**

Ground color that is subtly reflected in the sky

### **TYPE:**

float in [0, 1], default 0.0

## **ozone\_density**

Density of ozone layer. • 0 - No ozone. • 1 - Clear day atmosphere. • 2 - City like atmosphere

### **TYPE:**

float in [0, 10], default 1.0

## **sky\_type**

Which sky model should be used

- `PREETHAM` Preetham – Preetham 1999.
- `HOSEK_WILKIE` Hosek / Wilkie – Hosek / Wilkie 2012.
- `NISHITA` Nishita – Nishita 1993 improved.

### **TYPE:**

enum in ['PREETHAM', 'HOSEK\_WILKIE', 'NISHITA'], default 'PREETHAM'

## **sun\_direction**

Direction from where the sun is shining

---

**TYPE:**

`mathutils.Vector` of 3 items in  $[-\text{inf}, \text{inf}]$ , default (0.0, 0.0, 1.0)

**sun\_disc**

Include the sun itself in the output

**TYPE:**

boolean, default True

**sun\_elevation**

Sun angle from horizon

**TYPE:**

float in  $[-\text{inf}, \text{inf}]$ , default 1.5708

**sun\_intensity**

Strength of sun

**TYPE:**

float in  $[0, 1000]$ , default 1.0

**sun\_rotation**

Rotation of sun around zenith

**TYPE:**

float in  $[-\text{inf}, \text{inf}]$ , default 0.0

**sun\_size**

Size of sun disc

**TYPE:**

float in  $[0, 1.5708]$ , default 0.00951204

**texture\_mapping**

Texture coordinate mapping settings

**TYPE:**

`TexMapping`, (readonly, never None)

**turbidity**

Atmospheric turbidity

**TYPE:**

float in  $[1, 10]$ , default 0.0

**classmethod is\_registered\_node\_type()**

True if a registered node type

**RETURNS:**

Result

**RETURN TYPE:**

boolean

**classmethod input\_template(index)**

Input socket template

**PARAMETERS:**

**index** (*int* in  $[0, \text{inf})$ ) – Index

`RNA (url in [0, inf]) - RNA`

**RETURNS:**

result

**RETURN TYPE:**

`NodeInternalSocketTemplate`

**classmethod output\_template(index)**

Output socket template

**PARAMETERS:**

**index** (*int in [0, inf]*) – Index

**RETURNS:**

result

**RETURN TYPE:**

`NodeInternalSocketTemplate`

**classmethod bl\_ma\_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\_ma\_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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use custom color`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl height default`

- `Node.color`
- `Node.bl_height_min`
- `Node.color_tag`
- `Node.bl_height_max`

## 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`
- `Node.socket_value_update`
- `Node.is_registered_node_type`
- `Node.poll`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`
- `NodeInternal.draw_buttons_ext`
- `NodeInternal.bl_rna_get_subclass`
- `NodeInternal.bl_rna_get_subclass_py`
- `ShaderNode.poll`
- `ShaderNode.bl_rna_get_subclass`
- `ShaderNode.bl_rna_get_subclass_py`

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# ShaderNodeTexVoronoi(ShaderNode)

base classes — [bpy\\_struct](#), [Node](#), [NodeInternal](#), [ShaderNode](#)

**class** bpy.types.ShaderNodeTexVoronoi(ShaderNode)

Generate Worley noise based on the distance to random points. Typically used to generate textures such as stones, water, or biological cells

## color\_mapping

Color mapping settings

### TYPE:

[ColorMapping](#), (readonly, never None)

## distance

The distance metric used to compute the texture

- `EUCLIDEAN` Euclidean – Euclidean distance.
- `MANHATTAN` Manhattan – Manhattan distance.
- `CHEBYCHEV` Chebychev – Chebychev distance.
- `MINKOWSKI` Minkowski – Minkowski distance.

### TYPE:

enum in ['EUCLIDEAN', 'MANHATTAN', 'CHEBYCHEV', 'MINKOWSKI'], default 'EUCLIDEAN'

## feature

The Voronoi feature that the node will compute

- `F1` F1 – Computes the distance to the closest point as well as its position and color.
- `F2` F2 – Computes the distance to the second closest point as well as its position and color.
- `SMOOTH_F1` Smooth F1 – Smoothed version of F1. Weighted sum of neighbor voronoi cells..
- `DISTANCE_TO_EDGE` Distance to Edge – Computes the distance to the edge of the voronoi cell.
- `N_SPHERE_RADIUS` N-Sphere Radius – Computes the radius of the n-sphere inscribed in the voronoi cell.

### TYPE:

enum in ['F1', 'F2', 'SMOOTH\_F1', 'DISTANCE\_TO\_EDGE', 'N\_SPHERE\_RADIUS'], default 'F1'

## normalize

Normalize output Distance to 0.0 to 1.0 range

### TYPE:

boolean, default False

## texture\_mapping

Texture coordinate mapping settings

### TYPE:

[TexMapping](#), (readonly, never None)

## voronoi\_dimensions

Number of dimensions to output noise for

- `1D` 1D – Use the scalar value W as input.
- `2D` 2D – Use the 2D vector (X, Y) as input. The Z component is ignored..
- `3D` 3D – Use the 3D vector (X, Y, Z) as input.
- `4D` 4D – Use the 4D vector (X, Y, Z, W) as input.



**TYPE:**

enum in ['1D', '2D', '3D', '4D'], default '1D'

**classmethod is\_registered\_node\_type()**

True if a registered node type

**RETURNS:**

Result

**RETURN TYPE:**

boolean

**classmethod input\_template(index)**

Input socket template

**PARAMETERS:**

**index** (*int* in  $[0, \infty]$ ) – Index

**RETURNS:**

result

**RETURN TYPE:**

`NodeInternalSocketTemplate`

**classmethod output\_template(index)**

Output socket template

**PARAMETERS:**

**index** (*int* in  $[0, \infty]$ ) – Index

**RETURNS:**

result

**RETURN TYPE:**

`NodeInternalSocketTemplate`

**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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.socket_value_update`
- `Node.is_registered_node_type`
- `Node.poll`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`
- `NodeInternal.draw_buttons_ext`
- `NodeInternal.bl_rna_get_subclass`
- `NodeInternal.bl_rna_get_subclass_py`
- `ShaderNode.poll`
- `ShaderNode.bl_rna_get_subclass`
- `ShaderNode.bl_rna_get_subclass_py`



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# ShaderNodeTexWave(ShaderNode)

base classes — [bpy\\_struct](#), [Node](#), [NodeInternal](#), [ShaderNode](#)

**class** bpy.types.ShaderNodeTexWave(ShaderNode)

Generate procedural bands or rings with noise

## bands\_direction

- `X` `X` – Bands across X axis.
- `Y` `Y` – Bands across Y axis.
- `Z` `Z` – Bands across Z axis.
- `DIAGONAL` `Diagonal` – Bands across diagonal axis.

### TYPE:

enum in ['X', 'Y', 'Z', 'DIAGONAL'], default 'X'

## color\_mapping

Color mapping settings

### TYPE:

[ColorMapping](#), (readonly, never None)

## rings\_direction

- `X` `X` – Rings along X axis.
- `Y` `Y` – Rings along Y axis.
- `Z` `Z` – Rings along Z axis.
- `SPHERICAL` `Spherical` – Rings along spherical distance.

### TYPE:

enum in ['X', 'Y', 'Z', 'SPHERICAL'], default 'X'

## texture\_mapping

Texture coordinate mapping settings

### TYPE:

[TexMapping](#), (readonly, never None)

## wave\_profile

- `SIN` `Sine` – Use a standard sine profile.
- `SAW` `Saw` – Use a sawtooth profile.
- `TRI` `Triangle` – Use a triangle profile.

### TYPE:

enum in ['SIN', 'SAW', 'TRI'], default 'SIN'

## wave\_type

- `BANDS` `Bands` – Use standard wave texture in bands.
- `RINGS` `Rings` – Use wave texture in rings.

### TYPE:

enum in ['BANDS', 'RINGS'], default 'BANDS'

**classmethod** `is_registered_node_type()`

True if a registered node type

**RETURNS:**

Result

**RETURN TYPE:**

boolean

**classmethod `input_template(index)`**

Input socket template

**PARAMETERS:**

**index** (*int in  $[0, inf]$* ) – Index

**RETURNS:**

result

**RETURN TYPE:**

`NodeInternalSocketTemplate`

**classmethod `output_template(index)`**

Output socket template

**PARAMETERS:**

**index** (*int in  $[0, inf]$* ) – Index

**RETURNS:**

result

**RETURN TYPE:**

`NodeInternalSocketTemplate`

**classmethod `bl_ma_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_ma_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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`

- `node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.socket_value_update`
- `Node.is_registered_node_type`
- `Node.poll`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`
- `NodeInternal.draw_buttons_ext`
- `NodeInternal.bl_rna_get_subclass`
- `NodeInternal.bl_rna_get_subclass_py`
- `ShaderNode.poll`
- `ShaderNode.bl_rna_get_subclass`
- `ShaderNode.bl_rna_get_subclass_py`

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# ShaderNodeTexWhiteNoise(ShaderNode)

base classes — [bpy\\_struct](#), [Node](#), [NodeInternal](#), [ShaderNode](#)

**class** bpy.types.ShaderNodeTexWhiteNoise(ShaderNode)

Return a random value or color based on an input seed

## noise\_dimensions

Number of dimensions to output noise for

- 1D 1D – Use the scalar value W as input.
- 2D 2D – Use the 2D vector (X, Y) as input. The Z component is ignored..
- 3D 3D – Use the 3D vector (X, Y, Z) as input.
- 4D 4D – Use the 4D vector (X, Y, Z, W) as input.

## TYPE:

enum in ['1D', '2D', '3D', '4D'], default '1D'

**classmethod** is\_registered\_node\_type()

True if a registered node type

## RETURNS:

Result

## RETURN TYPE:

boolean

**classmethod** input\_template(index)

Input socket template

## PARAMETERS:

**index** (*int in [0, inf]*) – Index

## RETURNS:

result

## RETURN TYPE:

[NodeInternalSocketTemplate](#)

**classmethod** output\_template(index)

Output socket template

## PARAMETERS:

**index** (*int in [0, inf]*) – Index

## RETURNS:

result

## RETURN TYPE:

[NodeInternalSocketTemplate](#)

**classmethod** bl\_ma\_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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`



- `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`
- `Node.socket_value_update`
- `Node.is_registered_node_type`
- `Node.poll`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`
- `NodeInternal.draw_buttons_ext`
- `NodeInternal.bl_rna_get_subclass`
- `NodeInternal.bl_rna_get_subclass_py`
- `ShaderNode.poll`
- `ShaderNode.bl_rna_get_subclass`
- `ShaderNode.bl_rna_get_subclass_py`

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# ShaderNodeTree(NodeTree)

base classes — `bpy_struct`, `ID`, `NodeTree`

**class** `bpy.types.ShaderNodeTree(NodeTree)`

Node tree consisting of linked nodes used for materials (and other shading data-blocks)

**get\_output\_node(target)**

Return active shader output node for the specified target

**PARAMETERS:**

**target** (*enum in ['ALL', 'EVEE', 'CYCLES']*) –

Target

- `ALL` All – Use shaders for all renderers and viewports, unless there exists a more specific output.
- `EVEE` EEVEE – Use shaders for EEVEE renderer.
- `CYCLES` Cycles – Use shaders for Cycles renderer.

**RETURNS:**

Node

**RETURN TYPE:**

`ShaderNode`

**classmethod** `bl_ma_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_ma_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

- |                                   |  |
|-----------------------------------|--|
| • <code>bpy_struct.id_data</code> | • <code>ID.asset_data</code>                     |
| • <code>ID.name</code>            | • <code>ID.override_library</code>               |
| • <code>ID.name_full</code>       | • <code>ID.preview</code>                        |
| • <code>ID.id_type</code>         | • <code>NodeTree.color_tag</code>                |
| • <code>ID.session_uid</code>     | • <code>NodeTree.default_group_node_width</code> |
| • <code>ID.is_evaluated</code>    | • <code>NodeTree.view_center</code>              |
| • <code>ID.original</code>        | • <code>NodeTree.description</code>              |
| • <code>ID.users</code>           | • <code>NodeTree.animation_data</code>           |
| • <code>ID.use_fake_name</code>   | • <code>NodeTree.nodes</code>                    |

- `ID.use_take_user`
- `ID.use_extra_user`
- `ID.is_embedded_data`
- `ID.is_missing`
- `ID.is_runtime_data`
- `ID.is_editable`
- `ID.tag`
- `ID.is_library_indirect`
- `ID.library`
- `ID.library_weak_reference`
- `NodeTree.nodes`
- `NodeTree.links`
- `NodeTree.grease_pencil`
- `NodeTree.type`
- `NodeTree.interface`
- `NodeTree.bl_idname`
- `NodeTree.bl_label`
- `NodeTree.bl_description`
- `NodeTree.bl_icon`
- `NodeTree.bl_use_group_interface`

## 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`
- `ID.rename`
- `ID.evaluated_get`
- `ID.copy`
- `ID.asset_mark`
- `ID.asset_clear`
- `ID.asset_generate_preview`
- `ID.override_create`
- `ID.override_hierarchy_create`
- `ID.user_clear`
- `ID.user_remap`
- `ID.make_local`
- `ID.user_of_id`
- `ID.animation_data_create`
- `ID.animation_data_clear`
- `ID.update_tag`
- `ID.preview_ensure`
- `ID.bl_rna_get_subclass`
- `ID.bl_rna_get_subclass_py`
- `NodeTree.interface_update`
- `NodeTree.contains_tree`
- `NodeTree.poll`
- `NodeTree.update`
- `NodeTree.get_from_context`
- `NodeTree.valid_socket_type`
- `NodeTree.debug_lazy_function_graph`
- `NodeTree.bl_rna_get_subclass`
- `NodeTree.bl_rna_get_subclass_py`

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# ShaderNodeUVAlongStroke(ShaderNode)

base classes — [bpy\\_struct](#), [Node](#), [NodeInternal](#), [ShaderNode](#)

**class** bpy.types.ShaderNodeUVAlongStroke(ShaderNode)

**use\_tips**

Lower half of the texture is for tips of the stroke

**TYPE:**

boolean, default False

**classmethod** is\_registered\_node\_type()

True if a registered node type

**RETURNS:**

Result

**RETURN TYPE:**

boolean

**classmethod** input\_template(index)

Input socket template

**PARAMETERS:**

**index** (*int* in  $[0, inf]$ ) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**classmethod** output\_template(index)

Output socket template

**PARAMETERS:**

**index** (*int* in  $[0, inf]$ ) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`
- `NodeInternal.draw_buttons_ext`
- `NodeInternal.bl_rna_get_subclass`

- `bpy_struct.type_recast`
- `bpy_struct.values`
- `Node.socket_value_update`
- `Node.is_registered_node_type`
- `Node.poll`

- `NodeInternal.bl_rna_get_subclass_py`
- `ShaderNode.poll`
- `ShaderNode.bl_rna_get_subclass`
- `ShaderNode.bl_rna_get_subclass_py`

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# ShaderNodeUVMap(ShaderNode)

base classes — [bpy\\_struct](#), [Node](#), [NodeInternal](#), [ShaderNode](#)

**class** bpy.types.ShaderNodeUVMap(ShaderNode)

Retrieve a UV map from the geometry, or the default fallback if none is specified

**from\_instancer**

Use the parent of the instance object if possible

**TYPE:**

boolean, default False

**uv\_map**

UV coordinates to be used for mapping

**TYPE:**

string, default “”, (never None)

**classmethod** is\_registered\_node\_type()

True if a registered node type

**RETURNS:**

Result

**RETURN TYPE:**

boolean

**classmethod** input\_template(index)

Input socket template

**PARAMETERS:**

**index** (*int in [0, inf]*) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**classmethod** output\_template(index)

Output socket template

**PARAMETERS:**

**index** (*int in [0, inf]*) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`



- [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](#)
- [Node.socket\\_value\\_update](#)
- [Node.is\\_registered\\_node\\_type](#)
- [Node.poll](#)
- [Node.bl\\_rna\\_get\\_subclass\\_py](#)
- [NodeInternal.poll](#)
- [NodeInternal.poll\\_instance](#)
- [NodeInternal.update](#)
- [NodeInternal.draw\\_buttons](#)
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# ShaderNodeValToRGB(ShaderNode)

base classes — [bpy\\_struct](#), [Node](#), [NodeInternal](#), [ShaderNode](#)

**class** `bpy.types.ShaderNodeValToRGB(ShaderNode)`

Map values to colors with the use of a gradient

**color\_ramp**

**TYPE:**

[ColorRamp](#), (readonly)

**classmethod** `is_registered_node_type()`

True if a registered node type

**RETURNS:**

Result

**RETURN TYPE:**

boolean

**classmethod** `input_template(index)`

Input socket template

**PARAMETERS:**

**index** (*int* in  $[0, \infty]$ ) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**classmethod** `output_template(index)`

Output socket template

**PARAMETERS:**

**index** (*int* in  $[0, \infty]$ ) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`
- `NodeInternal.draw_buttons_ext`
- `NodeInternal.bl_rna_get_subclass`

- `bpy_struct.type_recast`
- `bpy_struct.values`
- `Node.socket_value_update`
- `Node.is_registered_node_type`
- `Node.poll`

- `NodeInternal.bl_rna_get_subclass_py`
- `ShaderNode.poll`
- `ShaderNode.bl_rna_get_subclass`
- `ShaderNode.bl_rna_get_subclass_py`

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# ShaderNodeValue(ShaderNode)

base classes — [bpy\\_struct](#) , [Node](#) , [NodeInternal](#) , [ShaderNode](#)

**class** bpy.types.ShaderNodeValue(ShaderNode)

Input numerical values to other nodes in the tree

**classmethod** is\_registered\_node\_type()

True if a registered node type

**RETURNS:**

Result

**RETURN TYPE:**

boolean

**classmethod** input\_template(index)

Input socket template

**PARAMETERS:**

**index** (*int* in  $[0, inf]$ ) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**classmethod** output\_template(index)

Output socket template

**PARAMETERS:**

**index** (*int* in  $[0, inf]$ ) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.socket_value_update`
- `Node.is_registered_node_type`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`
- `NodeInternal.draw_buttons_ext`
- `NodeInternal.bl_rna_get_subclass`
- `NodeInternal.bl_rna_get_subclass_py`
- `ShaderNode.poll`
- `ShaderNode.bl_rna_get_subclass`

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# ShaderNodeVectorCurve(ShaderNode)

base classes — [bpy\\_struct](#), [Node](#), [NodeInternal](#), [ShaderNode](#)

**class** `bpy.types.ShaderNodeVectorCurve(ShaderNode)`

Map input vector components with curves

**mapping**

**TYPE:**

[CurveMapping](#), (readonly)

**classmethod** `is_registered_node_type()`

True if a registered node type

**RETURNS:**

Result

**RETURN TYPE:**

boolean

**classmethod** `input_template(index)`

Input socket template

**PARAMETERS:**

**index** (*int* in  $[0, \infty]$ ) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**classmethod** `output_template(index)`

Output socket template

**PARAMETERS:**

**index** (*int* in  $[0, \infty]$ ) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`
- `NodeInternal.draw_buttons_ext`
- `NodeInternal.bl_rna_get_subclass`

- `bpy_struct.type_recast`
- `bpy_struct.values`
- `Node.socket_value_update`
- `Node.is_registered_node_type`
- `Node.poll`

- `NodeInternal.bl_rna_get_subclass_py`
- `ShaderNode.poll`
- `ShaderNode.bl_rna_get_subclass`
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# ShaderNodeVectorDisplacement(ShaderNode)

base classes — [bpy\\_struct](#), [Node](#), [NodeInternal](#), [ShaderNode](#)

**class** bpy.types.ShaderNodeVectorDisplacement(ShaderNode)

Displace the surface along an arbitrary direction

## space

Space of the input height

- `TANGENT` Tangent Space – Tangent space vector displacement mapping.
- `OBJECT` Object Space – Object space vector displacement mapping.
- `WORLD` World Space – World space vector displacement mapping.

## TYPE:

enum in ['TANGENT', 'OBJECT', 'WORLD'], default 'TANGENT'

**classmethod** `is_registered_node_type()`

True if a registered node type

## RETURNS:

Result

## RETURN TYPE:

boolean

**classmethod** `input_template(index)`

Input socket template

## PARAMETERS:

**index** (*int* in  $[0, \infty]$ ) – Index

## RETURNS:

result

## RETURN TYPE:

[NodeInternalSocketTemplate](#)

**classmethod** `output_template(index)`

Output socket template

## PARAMETERS:

**index** (*int* in  $[0, \infty]$ ) – Index

## RETURNS:

result

## RETURN TYPE:

[NodeInternalSocketTemplate](#)

**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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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.poll_from_id`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`

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- [bpy\\_struct.path\\_resolve](#)
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- [bpy\\_struct.type\\_recast](#)
- [bpy\\_struct.values](#)
- [Node.socket\\_value\\_update](#)
- [Node.is\\_registered\\_node\\_type](#)
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# ShaderNodeVectorMath(ShaderNode)

base classes — [bpy\\_struct](#), [Node](#), [NodeInternal](#), [ShaderNode](#)

**class** `bpy.types.ShaderNodeVectorMath(ShaderNode)`

Perform vector math operation

## operation

### TYPE:

enum in [Node Vec Math Items](#), default 'ADD'

**classmethod** `is_registered_node_type()`

True if a registered node type

### RETURNS:

Result

### RETURN TYPE:

boolean

**classmethod** `input_template(index)`

Input socket template

### PARAMETERS:

**index** (*int* in  $[0, \infty]$ ) – Index

### RETURNS:

result

### RETURN TYPE:

[NodeInternalSocketTemplate](#)

**classmethod** `output_template(index)`

Output socket template

### PARAMETERS:

**index** (*int* in  $[0, \infty]$ ) – Index

### RETURNS:

result

### RETURN TYPE:

[NodeInternalSocketTemplate](#)

**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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`
- `NodeInternal.draw_buttons_ext`
- `NodeInternal.bl_rna_get_subclass`

- `bpy_struct.type_recast`
- `bpy_struct.values`
- `Node.socket_value_update`
- `Node.is_registered_node_type`
- `Node.poll`

- `NodeInternal.bl_rna_get_subclass_py`
- `ShaderNode.poll`
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# ShaderNodeVectorRotate(ShaderNode)

base classes — [bpy\\_struct](#), [Node](#), [NodeInternal](#), [ShaderNode](#)

**class** bpy.types.ShaderNodeVectorRotate(ShaderNode)

Rotate a vector around a pivot point (center)

## invert

Invert the rotation angle

## TYPE:

boolean, default False

## rotation\_type

Type of angle input

- `AXIS_ANGLE` Axis Angle – Rotate a point using axis angle.
- `X_AXIS` X Axis – Rotate a point using X axis.
- `Y_AXIS` Y Axis – Rotate a point using Y axis.
- `Z_AXIS` Z Axis – Rotate a point using Z axis.
- `EULER_XYZ` Euler – Rotate a point using XYZ order.

## TYPE:

enum in ['AXIS\_ANGLE', 'X\_AXIS', 'Y\_AXIS', 'Z\_AXIS', 'EULER\_XYZ'], default 'AXIS\_ANGLE'

**classmethod** `is_registered_node_type()`

True if a registered node type

## RETURNS:

Result

## RETURN TYPE:

boolean

**classmethod** `input_template(index)`

Input socket template

## PARAMETERS:

**index** (*int in [0, inf]*) – Index

## RETURNS:

result

## RETURN TYPE:

[NodeInternalSocketTemplate](#)

**classmethod** `output_template(index)`

Output socket template

## PARAMETERS:

**index** (*int in [0, inf]*) – Index

## RETURNS:

result

## RETURN TYPE:

[NodeInternalSocketTemplate](#)

**classmethod** `bl_ma_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_ma_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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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.id_properties_remove`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`

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- [NodeInternal.bl\\_rna\\_get\\_subclass\\_py](#)
- [ShaderNode.poll](#)
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# ShaderNodeVectorTransform(ShaderNode)

base classes — [bpy\\_struct](#), [Node](#), [NodeInternal](#), [ShaderNode](#)

**class** bpy.types.ShaderNodeVectorTransform(ShaderNode)

Convert a vector, point, or normal between world, camera, and object coordinate space

**convert\_from**

Space to convert from

**TYPE:**

enum in ['WORLD', 'OBJECT', 'CAMERA'], default 'WORLD'

**convert\_to**

Space to convert to

**TYPE:**

enum in ['WORLD', 'OBJECT', 'CAMERA'], default 'WORLD'

**vector\_type**

- **POINT** Point – Transform a point.
- **VECTOR** Vector – Transform a direction vector.
- **NORMAL** Normal – Transform a normal vector with unit length.

**TYPE:**

enum in ['POINT', 'VECTOR', 'NORMAL'], default 'VECTOR'

**classmethod** is\_registered\_node\_type()

True if a registered node type

**RETURNS:**

Result

**RETURN TYPE:**

boolean

**classmethod** input\_template(index)

Input socket template

**PARAMETERS:**

**index** (*int in [0, inf]*) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**classmethod** output\_template(index)

Output socket template

**PARAMETERS:**

**index** (*int in [0, inf]*) – Index

**RETURNS:**

result

**RETURN TYPE:**

#### RETURN TYPE:

`NodeInternalSocketTemplate`

**classmethod** `bl_ma_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_ma_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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`

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- [bpy\\_struct.is\\_property\\_readonly](#)
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- [Node.debug\\_zone\\_body\\_lazy\\_function\\_graph](#)
- [Node.debug\\_zone\\_lazy\\_function\\_graph](#)
- [Node.poll](#)
- [Node.bl\\_rna\\_get\\_subclass](#)
- [Node.bl\\_rna\\_get\\_subclass\\_py](#)
- [NodeInternal.poll](#)
- [NodeInternal.poll\\_instance](#)
- [NodeInternal.update](#)
- [NodeInternal.draw\\_buttons](#)
- [NodeInternal.draw\\_buttons\\_ext](#)
- [NodeInternal.bl\\_rna\\_get\\_subclass](#)
- [NodeInternal.bl\\_rna\\_get\\_subclass\\_py](#)
- [ShaderNode.poll](#)
- [ShaderNode.bl\\_rna\\_get\\_subclass](#)
- [ShaderNode.bl\\_rna\\_get\\_subclass\\_py](#)

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# ShaderNodeVertexColor(ShaderNode)

base classes — [bpy\\_struct](#), [Node](#), [NodeInternal](#), [ShaderNode](#)

**class** bpy.types.ShaderNodeVertexColor(ShaderNode)

Retrieve a color attribute, or the default fallback if none is specified

**layer\_name**

Color Attribute

**TYPE:**

string, default ‘’, (never None)

**classmethod** is\_registered\_node\_type()

True if a registered node type

**RETURNS:**

Result

**RETURN TYPE:**

boolean

**classmethod** input\_template(index)

Input socket template

**PARAMETERS:**

**index** (*int in [0, inf]*) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**classmethod** output\_template(index)

Output socket template

**PARAMETERS:**

**index** (*int in [0, inf]*) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**classmethod** bl\_ma\_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\_ma\_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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`



- [bpy\\_struct.property\\_unset](#)
- [bpy\\_struct.type\\_recast](#)
- [bpy\\_struct.values](#)
- [Node.socket\\_value\\_update](#)
- [Node.is\\_registered\\_node\\_type](#)
- [Node.poll](#)

- [NodeInternal.draw\\_buttons\\_ext](#)
- [NodeInternal.bl\\_rna\\_get\\_subclass](#)
- [NodeInternal.bl\\_rna\\_get\\_subclass\\_py](#)
- [ShaderNode.poll](#)
- [ShaderNode.bl\\_rna\\_get\\_subclass](#)
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# ShaderNodeVolumeAbsorption(ShaderNode)

base classes — `bpy_struct`, `Node`, `NodeInternal`, `ShaderNode`

**class** `bpy.types.ShaderNodeVolumeAbsorption(ShaderNode)`

Absorb light as it passes through the volume

**classmethod** `is_registered_node_type()`

True if a registered node type

**RETURNS:**

Result

**RETURN TYPE:**

boolean

**classmethod** `input_template(index)`

Input socket template

**PARAMETERS:**

**index** (*int* in  $[0, \infty]$ ) – Index

**RETURNS:**

result

**RETURN TYPE:**

`NodeInternalSocketTemplate`

**classmethod** `output_template(index)`

Output socket template

**PARAMETERS:**

**index** (*int* in  $[0, \infty]$ ) – Index

**RETURNS:**

result

**RETURN TYPE:**

`NodeInternalSocketTemplate`

**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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.socket_value_update`
- `Node.is_registered_node_type`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`
- `NodeInternal.draw_buttons_ext`
- `NodeInternal.bl_rna_get_subclass`
- `NodeInternal.bl_rna_get_subclass_py`
- `ShaderNode.poll`
- `ShaderNode.bl_rna_get_subclass`

- [Node.poll](#)

- [ShaderNode.bl\\_rna\\_get\\_subclass\\_py](#)

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# ShaderNodeVolumeInfo(ShaderNode)

base classes — [bpy\\_struct](#), [Node](#), [NodeInternal](#), [ShaderNode](#)

**class** `bpy.types.ShaderNodeVolumeInfo(ShaderNode)`

Read volume data attributes from volume grids

**classmethod** `is_registered_node_type()`

True if a registered node type

**RETURNS:**

Result

**RETURN TYPE:**

boolean

**classmethod** `input_template(index)`

Input socket template

**PARAMETERS:**

**index** (*int* in  $[0, \infty]$ ) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**classmethod** `output_template(index)`

Output socket template

**PARAMETERS:**

**index** (*int* in  $[0, \infty]$ ) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.socket_value_update`
- `Node.is_registered_node_type`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`
- `NodeInternal.draw_buttons_ext`
- `NodeInternal.bl_rna_get_subclass`
- `NodeInternal.bl_rna_get_subclass_py`
- `ShaderNode.poll`
- `ShaderNode.bl_rna_get_subclass`

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# ShaderNodeVolumePrincipled(ShaderNode)

base classes — [bpy\\_struct](#) , [Node](#) , [NodeInternal](#) , [ShaderNode](#)

**class** bpy.types.ShaderNodeVolumePrincipled(ShaderNode)

Combine all volume shading components into a single easy to use node

**classmethod** is\_registered\_node\_type()

True if a registered node type

**RETURNS:**

Result

**RETURN TYPE:**

boolean

**classmethod** input\_template(index)

Input socket template

**PARAMETERS:**

**index** (*int* in  $[0, inf]$ ) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**classmethod** output\_template(index)

Output socket template

**PARAMETERS:**

**index** (*int* in  $[0, inf]$ ) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.socket_value_update`
- `Node.is_registered_node_type`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`
- `NodeInternal.draw_buttons_ext`
- `NodeInternal.bl_rna_get_subclass`
- `NodeInternal.bl_rna_get_subclass_py`
- `ShaderNode.poll`
- `ShaderNode.bl_rna_get_subclass`

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# ShaderNodeVolumeScatter(ShaderNode)

base classes — [bpy\\_struct](#), [Node](#), [NodeInternal](#), [ShaderNode](#)

**class** bpy.types.ShaderNodeVolumeScatter(ShaderNode)

Scatter light as it passes through the volume, often used to add fog to a scene

## phase

Phase function for the scattered light

- `HENYEE_GREENSTEIN` Henyey-Greenstein – Henyey-Greenstein, default phase function for the scattering of light.
- `FOURNIER_FORAND` Fournier-Forand – Fournier-Forand phase function, used for the scattering of light in underwater environments.
- `DRAINE` Draine – Draine phase functions, mostly used for the scattering of light in interstellar dust.
- `RAYLEIGH` Rayleigh – Rayleigh phase function, mostly used for particles smaller than the wavelength of light, such as scattering of sunlight in earth's atmosphere.
- `MIE` Mie – Approximation of Mie scattering in water droplets, used for scattering in clouds and fog.

## TYPE:

enum in ['HENYEE\_GREENSTEIN', 'FOURNIER\_FORAND', 'DRAINE', 'RAYLEIGH', 'MIE'], default 'HENYEE\_GREENSTEIN'

**classmethod** `is_registered_node_type()`

True if a registered node type

## RETURNS:

Result

## RETURN TYPE:

boolean

**classmethod** `input_template(index)`

Input socket template

## PARAMETERS:

**index** (*int* in  $[0, \infty]$ ) – Index

## RETURNS:

result

## RETURN TYPE:

[NodeInternalSocketTemplate](#)

**classmethod** `output_template(index)`

Output socket template

## PARAMETERS:

**index** (*int* in  $[0, \infty]$ ) – Index

## RETURNS:

result

## RETURN TYPE:

[NodeInternalSocketTemplate](#)

**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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`

- `__`
- `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`
- `Node.socket_value_update`
- `Node.is_registered_node_type`
- `Node.poll`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`
- `NodeInternal.draw_buttons_ext`
- `NodeInternal.bl_rna_get_subclass`
- `NodeInternal.bl_rna_get_subclass_py`
- `ShaderNode.poll`
- `ShaderNode.bl_rna_get_subclass`
- `ShaderNode.bl_rna_get_subclass_py`

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# ShaderNodeWavelength(ShaderNode)

base classes — [bpy\\_struct](#), [Node](#), [NodeInternal](#), [ShaderNode](#)

**class** `bpy.types.ShaderNodeWavelength(ShaderNode)`

Convert a wavelength value to an RGB value

**classmethod** `is_registered_node_type()`

True if a registered node type

**RETURNS:**

Result

**RETURN TYPE:**

boolean

**classmethod** `input_template(index)`

Input socket template

**PARAMETERS:**

**index** (*int in [0, inf]*) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**classmethod** `output_template(index)`

Output socket template

**PARAMETERS:**

**index** (*int in [0, inf]*) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.socket_value_update`
- `Node.is_registered_node_type`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`
- `NodeInternal.draw_buttons_ext`
- `NodeInternal.bl_rna_get_subclass`
- `NodeInternal.bl_rna_get_subclass_py`
- `ShaderNode.poll`
- `ShaderNode.bl_rna_get_subclass`

- [Node.poll](#)

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# ShaderNodeWireframe(ShaderNode)

base classes — [bpy\\_struct](#), [Node](#), [NodeInternal](#), [ShaderNode](#)

**class** bpy.types.ShaderNodeWireframe(ShaderNode)

Retrieve the edges of an object as it appears to Cycles. Note: as meshes are triangulated before being processed by Cycles, topology will always appear triangulated

**use\_pixel\_size**

Use screen pixel size instead of world units

**TYPE:**

boolean, default False

**classmethod** is\_registered\_node\_type()

True if a registered node type

**RETURNS:**

Result

**RETURN TYPE:**

boolean

**classmethod** input\_template(index)

Input socket template

**PARAMETERS:**

**index** (*int* in  $[0, \text{inf}]$ ) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**classmethod** output\_template(index)

Output socket template

**PARAMETERS:**

**index** (*int* in  $[0, \text{inf}]$ ) – Index

**RETURNS:**

result

**RETURN TYPE:**

[NodeInternalSocketTemplate](#)

**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`
- `Node.type`
- `Node.location`
- `Node.location_absolute`
- `Node.width`
- `Node.height`
- `Node.dimensions`
- `Node.name`
- `Node.label`
- `Node.inputs`
- `Node.outputs`
- `Node.internal_links`
- `Node.parent`
- `Node.warning_propagation`
- `Node.use_custom_color`
- `Node.color`
- `Node.color_tag`
- `Node.select`
- `Node.show_options`
- `Node.show_preview`
- `Node.hide`
- `Node.mute`
- `Node.show_texture`
- `Node.bl_idname`
- `Node.bl_label`
- `Node.bl_description`
- `Node.bl_icon`
- `Node.bl_static_type`
- `Node.bl_width_default`
- `Node.bl_width_min`
- `Node.bl_width_max`
- `Node.bl_height_default`
- `Node.bl_height_min`
- `Node.bl_height_max`

## 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`
- `Node.poll_instance`
- `Node.update`
- `Node.insert_link`
- `Node.init`
- `Node.copy`
- `Node.free`
- `Node.draw_buttons`
- `Node.draw_buttons_ext`
- `Node.draw_label`
- `Node.debug_zone_body_lazy_function_graph`
- `Node.debug_zone_lazy_function_graph`
- `Node.poll`
- `Node.bl_rna_get_subclass`
- `Node.bl_rna_get_subclass_py`
- `NodeInternal.poll`
- `NodeInternal.poll_instance`
- `NodeInternal.update`
- `NodeInternal.draw_buttons`

- `bpy_struct.property_override_library_set`
- `bpy_struct.property_unset`
- `bpy_struct.type_recast`
- `bpy_struct.values`
- `Node.socket_value_update`
- `Node.is_registered_node_type`
- `Node.poll`
- `NodeInternal.draw_buttons`
- `NodeInternal.draw_buttons_ext`
- `NodeInternal.bl_rna_get_subclass`
- `NodeInternal.bl_rna_get_subclass_py`
- `ShaderNode.poll`
- `ShaderNode.bl_rna_get_subclass`
- `ShaderNode.bl_rna_get_subclass_py`

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# ShapeKey(bpy\_struct)

base class — [bpy\\_struct](#)

**class** bpy.types.ShapeKey(bpy\_struct)

Shape key in a shape keys data-block

## data

### TYPE:

[bpy\\_prop\\_collection](#) of [UnknownType](#), (readonly)

## frame

Frame for absolute keys

### TYPE:

float in [-inf, inf], default 0.0, (readonly)

## interpolation

Interpolation type for absolute shape keys

### TYPE:

enum in ['KEY\_LINEAR', 'KEY\_CARDINAL', 'KEY\_CATMULL\_ROM', 'KEY\_BSPLINE'], default 'KEY\_LINEAR'

## lock\_shape

Protect the shape key from accidental sculpting and editing

### TYPE:

boolean, default False

## mute

Toggle this shape key

### TYPE:

boolean, default False

## name

Name of Shape Key

### TYPE:

string, default "", (never None)

## points

Optimized access to shape keys point data, when using `foreach_get`/`foreach_set` accessors. Warning: Does not support legacy Curve shape keys.

### TYPE:

[bpy\\_prop\\_collection](#) of [ShapeKeyPoint](#), (readonly)

## relative\_key

Shape used as a relative key

### TYPE:

[ShapeKey](#), (never None)

## slider\_max

Maximum for slider

---

**TYPE:**

float in [-10, 10], default 1.0

**slider\_min**

Minimum for slider

**TYPE:**

float in [-10, 10], default 0.0

**value**

Value of shape key at the current frame

**TYPE:**

float in [0, 1], default 0.0

**vertex\_group**

Vertex weight group, to blend with basis shape

**TYPE:**

string, default “”, (never None)

**normals\_vertex\_get()**

Compute local space vertices’ normals for this shape key

**RETURNS:**

normals

**RETURN TYPE:**

float in [-1, 1]

**normals\_polygon\_get()**

Compute local space faces’ normals for this shape key

**RETURNS:**

normals

**RETURN TYPE:**

float in [-1, 1]

**normals\_split\_get()**

Compute local space face corners’ normals for this shape key

**RETURNS:**

normals

**RETURN TYPE:**

float in [-1, 1]

**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 def _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

- `ClothSettings.rest_shape_key`
- `Key.key_blocks`
- `Key.reference_key`
- `Object.active_shape_key`
- `Object.shape_key_add`
- `Object.shape_key_remove`
- `ShapeKey.relative_key`

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# ShapeKeyBezierPoint(bpy\_struct)

base class — `bpy_struct`

**class** `bpy.types.ShapeKeyBezierPoint(bpy_struct)`

Point in a shape key for Bézier curves

**co**

**TYPE:**

`mathutils.Vector` of 3 items in  $[-\text{inf}, \text{inf}]$ , default (0.0, 0.0, 0.0)

**handle\_left**

**TYPE:**

`mathutils.Vector` of 3 items in  $[-\text{inf}, \text{inf}]$ , default (0.0, 0.0, 0.0)

**handle\_right**

**TYPE:**

`mathutils.Vector` of 3 items in  $[-\text{inf}, \text{inf}]$ , default (0.0, 0.0, 0.0)

**radius**

Radius for beveling

**TYPE:**

float in  $[0, \text{inf}]$ , default 0.0

**tilt**

Tilt in 3D View

**TYPE:**

float in  $[-376.991, 376.991]$ , default 0.0

**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`
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