PxrBarnLightFilter

PxrBarnLightFilter allows us to create physically accurate window barns to simulate the real set lighting with correct shadowing. Its other usage include controlling bounce lights in a large scene. In addition to the physical mode, it also provides an analytic mode.

Parameters

Barn Mode

Select a barn mode:physical (0) The barn behaves like an open window through which light falls. The falloff and blur are determined by the size of the light, the distance to the light and distance from the barn.analytic (1) The barn has a fixed projection and manual falloff controls. If possible, use Physical Barn.

mode = Analytic
mode = Artistic Control
mode = Physical

Projection (For Analytic Barn Only)

Directional

When this is on, the texture projects along a direction using the orthographic projection. When it is off, the texture projects using a focal point specified by the Apex.

directional = off
directional = on

Shear X

Shear the projection along the X axis.

shear X = 0
shear X = 1
shear X = 2

Shear Y

Shear the projection along the Y axis.

shear Y = 0
shear Y = 0.1
shear Y = 0.2

Apex

Distance between the center of barn and the center of projection. This is only applicable when Directional is off.

apex = 0.2
apex = 1
apex = 10

Use Light Direction

If this is on, the projection direction is determined by the position of the center of the light source. Otherwise, it only follows the orientation of the cookie. WARNING: This does not work with dome and mesh lights.

use light direction = off
use light direction = on

Barn Shape

Width

Width of the inner region of the barn (X axis).

width = 0
width = 0.2
width = 0.8

Height

Height of the inner region of the barn (y axis).

height = 0
height = 0.4
height = 0.8

Radius

Radius of the corners of the inner barn square.

radius = 0.1
radius = 0.3
radius = 1

Edge

Thickness of the edge region.

edge = 0
edge = 0.1
edge = 0.3

Pre Barn

The effect on the light before it reaches the barn.

- no effect (0)
- cone (1)
- no light (2)

prebarn = Cone
prebarn = No Effect
prebarn = No Light

Scale

Scale Width

Scale the width of the inner barn shape (X axis).

scale width = 0.1
scale width = 1
scale width = 10

Scale Height

Scale the height of the inner barn shape (Y axis).

scale height = 0.1
scale height = 1
scale height = 10

Refine Edges

Left

Additional size of the left region (-X axis)

refine edge left = 0
refine edge left = 0.25
refine edge left = 0.5

Right

Additional size of the right region (+X axis)

refine edge right = 0
refine edge right = 0.25
refine edge right = 0.5

Bottom

Additional size of the bottom region (-Y axis)

refine edge bottom = 0
refine edge bottom = 0.25
refine edge bottom = 0.5

Top

Additional size of the top region (+Y axis)

refine edge top = 0
refine edge top = 0.25
refine edge top = 0.5

Scale Edges

Left Edge

Additional soft size of left region (-X axis).

scale edge left = 1
scale edge left = 2
scale edge left = 5

Right Edge

Additional soft size of right region (+X axis).

scale edge right = 1
scale edge right = 2
scale edge right = 5

Bottom Edge

Additional soft size of bottom region (-Y axis).

scale edge bottom = 1
scale edge bottom = 2
scale edge bottom = 5

Top Edge

Additional soft size of top region (+Y axis).

scale edge top = 1
scale edge top = 2
scale edge top = 5

Multiplier

Density

Controls the strength of this light filter.
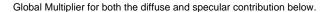
density = 0.45
density = 0.7
density = 1

Invert

Specify whether to invert the result of this light filter before it is applied.

invert = off
invert = on

Intensity

Global Multiplier for both the diffuse and specular contribution below.

intensity = 0
intensity = 1
intensity = 4

Diffuse

Multiplier of this light filter result for the diffuse contribution.

diffuse = 0
diffuse = 1
diffuse = 5

Specular

Multiplier of this light filter result for the specular contribution.

specular = 0
specular = 1
specular = 5

Density Falloff (For Analytic Barn Only)

Density Near

Distance from the barn where the density interpolation starts.

density near = 0
density near = 0.5
density near = 1

Density Far

Distance from the barn where the density interpolation ends.

density far = 0
density far = 0.5
density far = 1

Density Near Val

Density multiplier where the blur interpolation starts.

near value = 4
near value = 6
near value = 10

Density Far Val

Density multiplier where the blur interpolation ends.

far value = 6
far value = 9
far value = 12

Density Exponent

Exponent of the density interpolation.

exponent = 0.1
exponent = 0.5
exponent = 1

Combine Mode

Combine Mode

mult: The results of all the filters are multiplied together

max: The maximum result from all filters is used.This works best for grey scale light filters.

min: The minimum result from all filters is used.This works best for grey scale light filters.

screen: Similar to the max operation, but it combines gradients in a smoother way. This works best for grey scale light.

Light filters on a light are grouped by their combine mode. Light filters in the same group are executed together and combined by the combine mode.The groups are executed in this order (max, min, screen, and then mult) and are multiplied together, which means a filter that turns things black in the mult group will zero out all other filters.