



***Mental ray Lens Effect Library***  
for Maya

**User's Manual**

Release 1.12  
November 2005

## Mentalray Lens Library

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# Mental ray Lens Library

## Introduction

This Mentalray plug-in include 6 Lens shaders.

These node have 11 arithmetic for lens effect, which can be applied on Panoramic map and Fisheye effect.

There are 8 Panoramic arithmetic in these lens shader: [Spherical map](#), [Light probe map](#), [Cylinder map](#), [Horizontal Cross Cubemap](#), [Vertical Cross Cubemap\(Renderman\)](#), [NVIDIA Horizontal Cubemap](#), [XSI Strip Cubemap](#) and [Division Cubemap](#).

Other lens effect : [Fisheye lens](#), [Dof lens plus](#), [Fisheye mr lens](#).

## Update

11/15/2005

Version 1.121

Added new photographic Fisheye Lens, I held and renamed the old Fisheye to Fisheye mr Lens .

Added MAC OSX versions .

10/15/2005

Version 1.010

Added XSI Strip Cubemap Lnes .

Added 3D Studio MAX versions .

9/26/2005

Version 1.002

Fixed the precision bug .

9/23/2005

Version 1.001

First final version release .

## Installation

1. Unpack the compression file and copy "icons" folder and "mentalray" folder to Maya setup directory .

2. Open "maya.rayrc" file with Notepad(This file locate "mentalray" folder in Maya setup directory) .

Add the following lines after similar declarations in the maya.rayrc file:

```
link "{MAYABASE}/lib/mrsl.{DSO}"  
mi "{MAYABASE}/include/mrsl.mi"
```

These lines initialize the shader for Mental Ray. If they do not exist than the shader appears only in Maya but not in Mental Ray .

## How to use

Selected Camera and open Attribute Editor.

MMB+drag lens node which you need to Lens Shader Channel in Camera's Attribute Mentalray Tab .

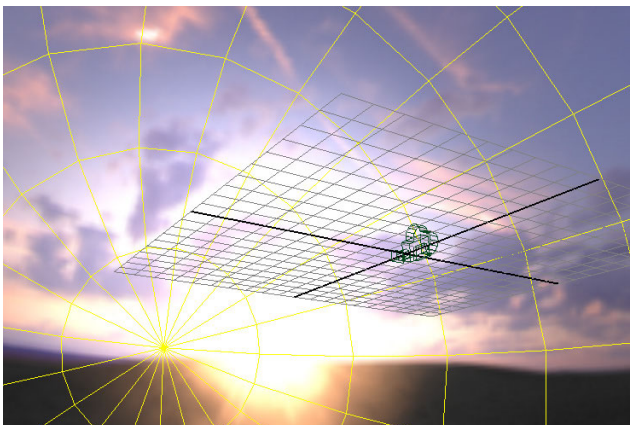
[Please read Maya Help Document for relevant operation.](#)

## Lens Node detail

The following Node does not take the image aspect ratio into account.

Please render image with recommendatory resolution.

*Jitter* Sample is recommended.



I use a sample panoramic map in IBL(Image based lighting) to explain these lens node.

The Lens Package includes 6 Node:

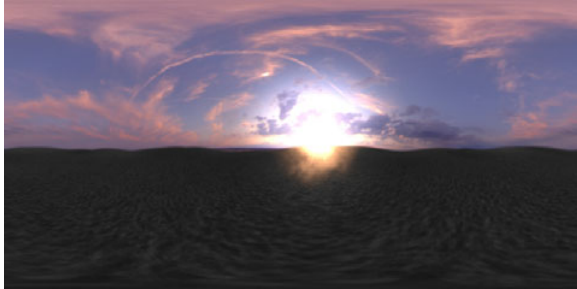


## al\_Sphere\_lens



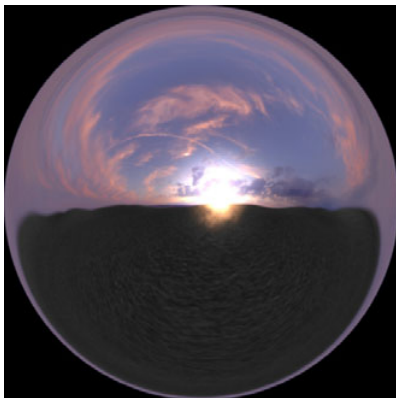
Parameter: **len\_mode** (0,1,2)

### 0 is Spherical map



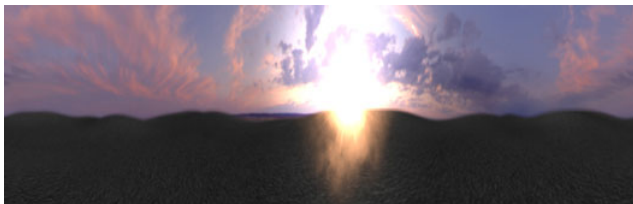
Resolution: 2048 x 1024 (w/h = 2/1)

### 1 is Light probe map



Resolution: 2048 x 2048 (w/h = 1/1)

### 2 is Cylinder map



Resolution: 3217 x 1024 (w/h = 3.142/1)

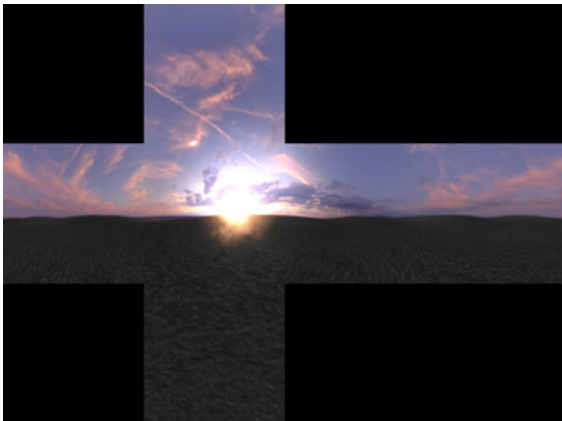
This lens is a Panoramic lens.

## al\_Cubemap\_lens



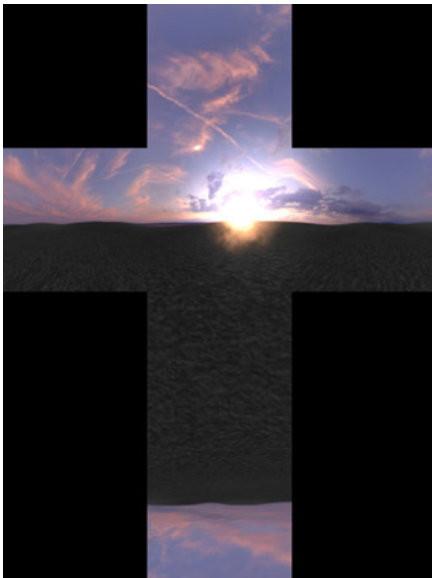
Parameter: **len\_mode** (0,1,2,3)

**0 is Horizontal Cross Cubemap**



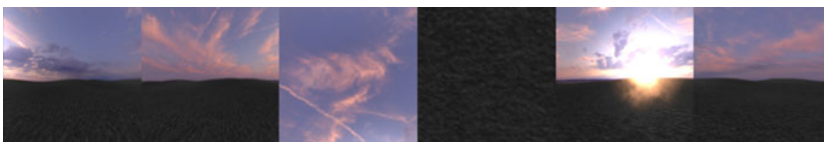
Resolution: 2048 x 1536 (w/h = 4/3)

**1 is Vertical Cross Cubemap**



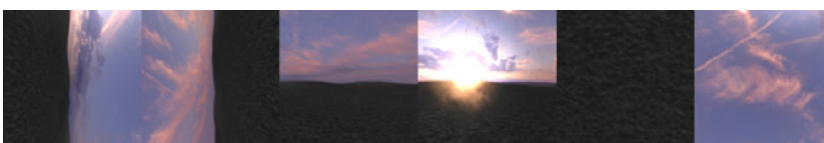
Resolution: 1536 x 2048 (w/h = 3/4)

**2 is NVidia Horizontal Cubemap**



Resolution: 3072 x 512 (w/h = 6/1)

**3 is XSI Strip Cubemap**



Resolution: 3072 x 512 (w/h = 6/1)

This lens is a Cubemap Panoramic lens.

The NVidia Horizontal is for CgFX Shader.

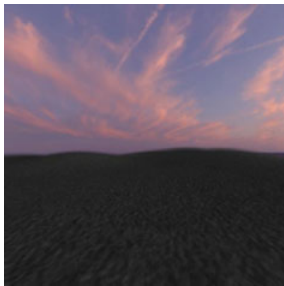
You can use Horizontal Cross or Vertical Cross to *mib\_lookup\_cube1* Env node.

## al\_Division\_cubemap\_lens

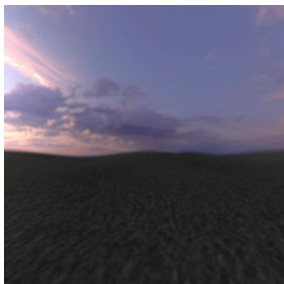


Parameter: **len\_mode** (0,1,2,3,4,5)

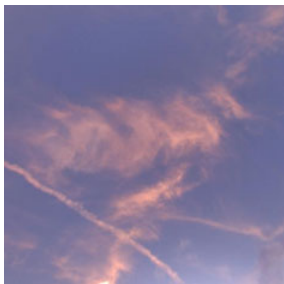
**0 is Left(-x) map of Cubemap (tex\_mx)**



**1 is Right(+x) map of Cubemap (tex\_px)**



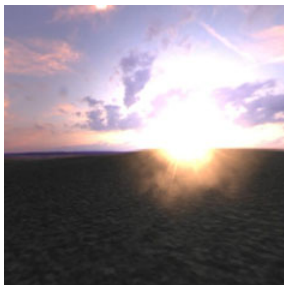
**2 is Top(+y) map of Cubemap (tex\_py)**



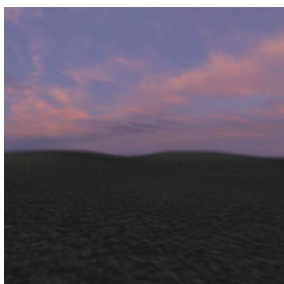
3 is Bottom(-y) map of Cubemap (tex\_my)



4 is Front(-z) map of Cubemap (tex\_mz)



5 is Back(+z) map of Cubemap (tex\_pz)



Resolution: 1048 x 1048 (w/h = 1/1)

This lens is a Cubemap Panoramic lens for Mentalray *mib\_lookup\_cube6* Env node.

## al\_Fisheye \_lens



Parameter: **Aspect Ratio** (0.166~6)

**View of angle** (120~180)

**Aspect Ratio** is for Resolution Aspect Ratio, If you want right Pixel Aspect Ratio you need set it same as Resolution Aspect Ratio.

**View of angle** is same as photographic lens view of angle setting, range is from 120 degree to 180 degree.



Resolution: ??? x ??? (w/h = 1/1)

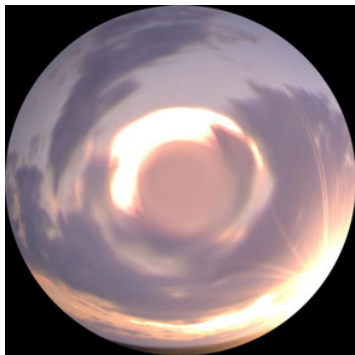
This lens is a Photographic Fisheye lens.

This shader is the physically correct.

### al\_Fisheye\_mr\_lens



Parameter: **void**



Resolution: ??? x ??? (w/h = 1/1)

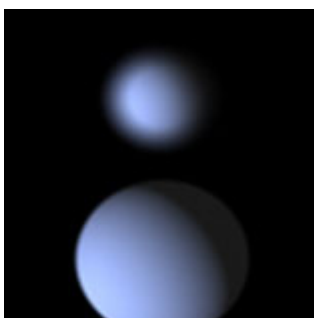
This lens is a Mental ray Fisheye lens(The code come from Mentalray guide).

I think this is wrong fisheye lens, maybe is real fish's eye.

### al\_Dof\_lens\_plus



Parameter: **Sample:** (2...128)



**Sample:** This is the number of samples per pixel used when processing Depth of field blur .

Other parameter same as original `physical_lens_dof` .Please see Maya's Help Document for detail .

This lens shader be added DOF sample control, improve quality of DOF blur .

The detail for Lens shader, please see Mentalray Reference Document in Maya's Help

**by Li Liu**

If you have any question please browse [ASDN](#) or [Email to me](#).