REF

Lights & Cameras

REFERENCE

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Release 4700; Subject to technical alteration.

Printed in Germany

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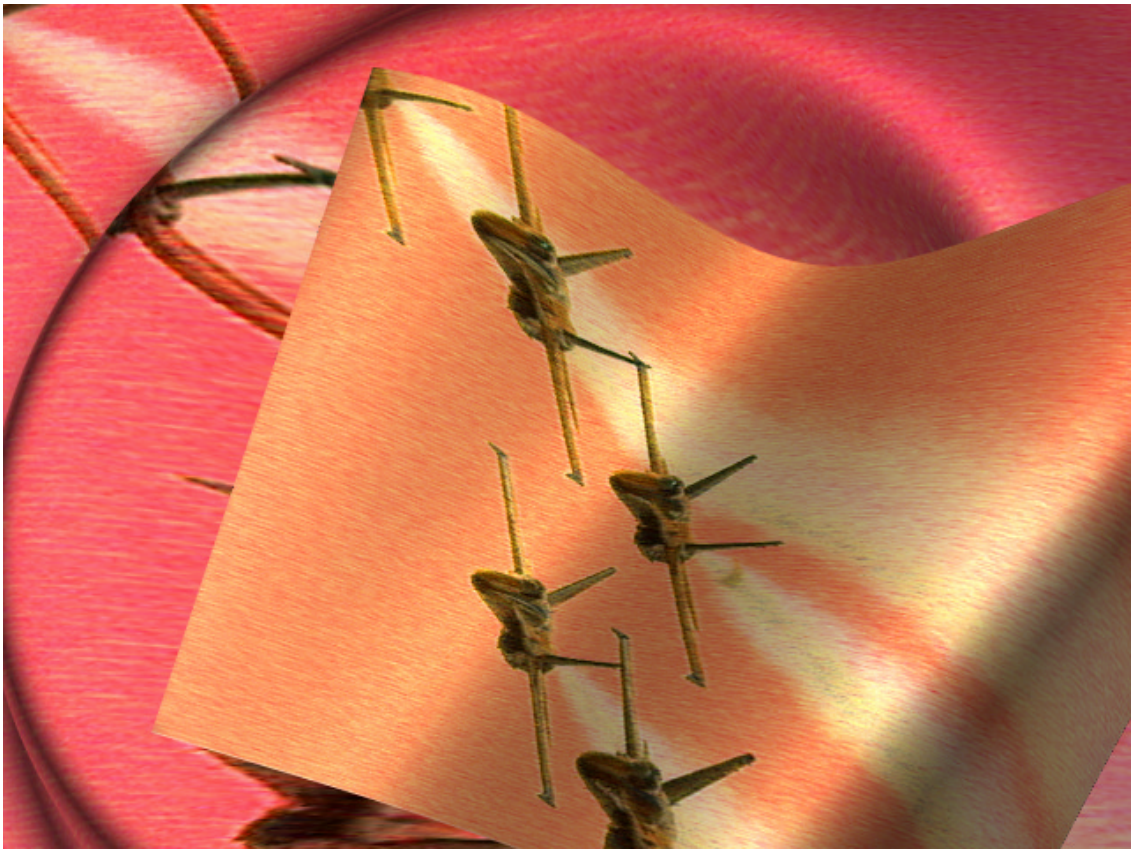
Lights



MoviePack objects are movie clips, still images, sound, DIB sequences etc, which are inserted into tracks in the **Timeline.** Objects are information carriers. As a rule objects carry image information but there are also a few special objects such as light.

The **Light** object contains the information needed to illuminate the objects in the animation. If mobile cameras distort perspectives or 3D effects have been applied to objects, the play of light on the objects changes. Illuminated positions stand out while shadows darken segments of the image. The shadow play is significantly influenced by additional light sources.

Interface

Menu bar: Contains program functions as pull-down menus

Icon bars

Path and position of the light source in the animation

Current position of the Light

Distance of the light source from object

Position on the surface

Parameters of the active light source

Preview

Timeline

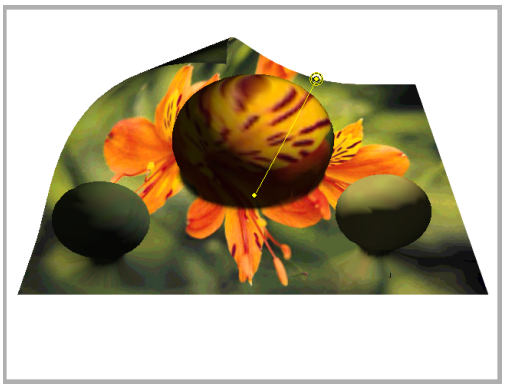
Light track

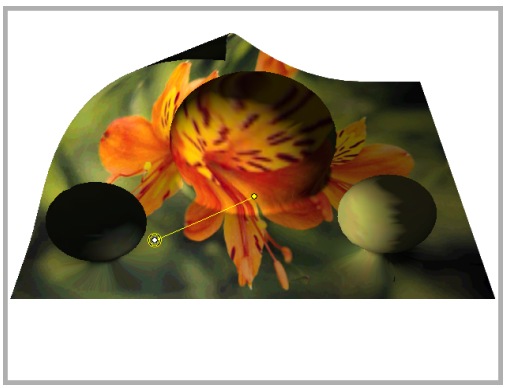
Browser

Canvas

Omnidirectional Light

In the default setting each **Canvas** possesses a light source. Under **Tools / Options / General** this light can be removed. The objects then appear brighter as they no longer cast any shadows. Moreover further light sources can be applied to visual objects. Like every other object, the light source in Moviepack can be placed onto the **Canvas**. It works in three-dimensional space.





The yellow star shows the position of the light source. If the object **Light** is active, the path is shown. If the light source is moved, the effect is immediately visible in the **Canvas**.

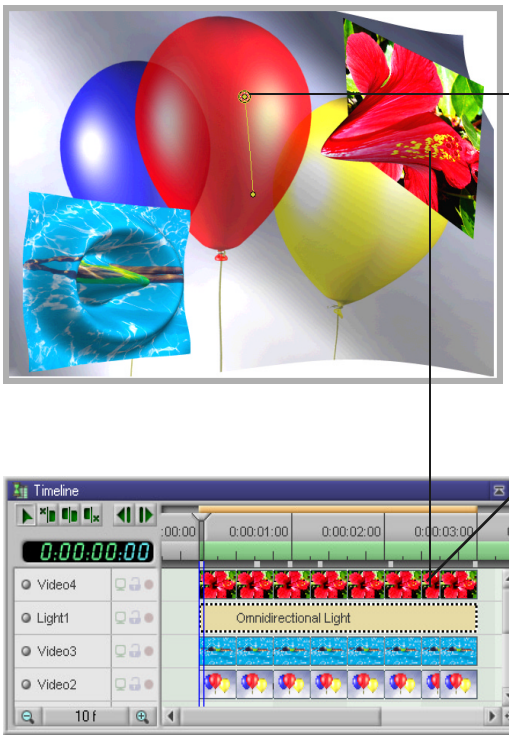
Consider the **Canvas** to be a cube which you can look into from above. If you move the light horizontally or vertically on the **Canvas**, this equals a right / left or backward / forward movement in space (X and Y axes). The height of the light source can also be adjusted (Z axis). A high light stands, viewed three-dimensionally, near your level of vision into the cube, a low light at the base of the cube. The objects move in this three-dimensional space almost always at ground level. If you move the light source closer to the ground, less of the object will be illuminated.

Selecting the Light Object

▶ In the **Browser** select **Objects / Lights and Cameras**, **Omnidirectional Light**.
A track with the description **Omnidirectional Light** is opened in the **Timeline**.
The light parameters can be set in the **Effect Box**.

Using Light

The **Light** object can influence only the tracks which lie under the light source in the **Timeline**. The objects in the editing tracks remain unchanged.



Position of the Light Source

The light source, like every normal object, can be moved along the X and Y axes. In addition the height can also be altered on the Z axis.

The different ways of moving the light source are explained under **Positioning Objects** in the booklets 'Reference - Effect Box' and 'Reference - Canvas'.

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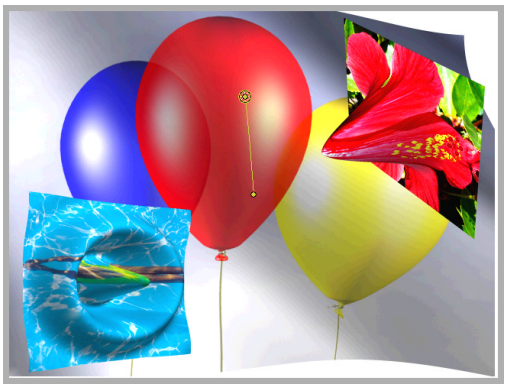
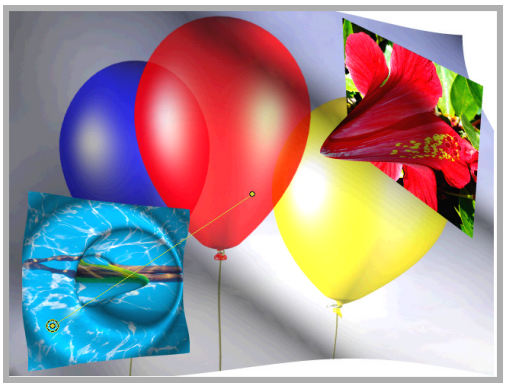


If the light source lies directly above the objects a large shadow is cast.



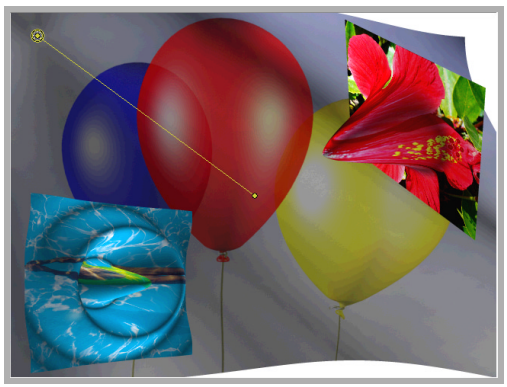
Here the light source remains at the same height, but is shining in the opposite direction. The shadow is also cast in the opposite direction.

Height of the Light Source

Positioning on the Z axis
(Distance between the light source and the object)

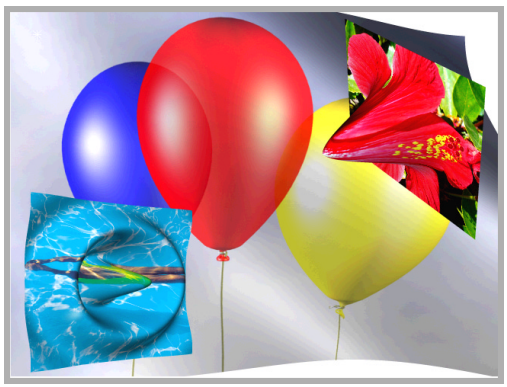
- Movement along the Z axis corresponds to the height of the light in space and is set using the parameter **Height**. The higher the light source is positioned (slider moved to the right), the fewer shadows are cast. This creates an effect similiar to that of a sunset in the afternoon and evening.

The light source lies directly above the objects. A large shadow is cast.



The height of the light source over the objects is set using the parameter slider **Height.** 0 is ground level, 1000 means no shadow at all.

Here the light source remains in the same position but is placed significantly higher. This is similiar to the afternoon time in summer when there are hardly any shadows.



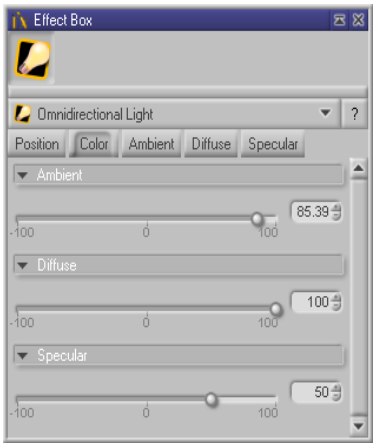
Adjusting Light to Object Depth

Using the 3D effect Correction by Z from the effect group 3D FX, objects can be raised from their ground level position in space or lowered further into space (under ground level). Corresponding to its altered position the object is illuminated by the activated light. In this way you can achieve the illusion of objects flying in space.

Correction by Z relates only to the object to which the effect has been applied. The tracks lying underneath remain at ground level and are not illuminated by the light source.

Determining Light and Shadow Behavior

Your light source should not only apply light and shadow to scenes but also create a mood. That is why you are able to determine the type of light and the strength and color of the light and shadow. The intensity of these three parameters is determined in the Color tab.



Ambient = Surrounding light, indirectly intensifies and diminishes the shadow effect.

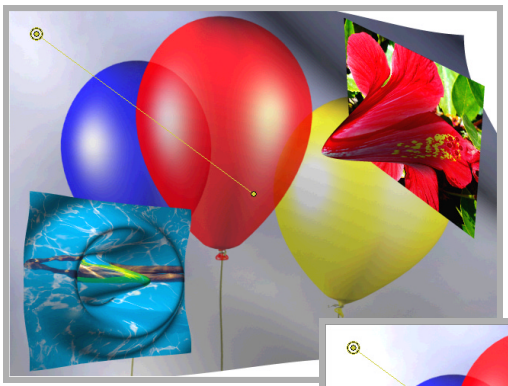
Diffuse = Strength of the direct light.

Specular = determines color and intensity of the reflected light.

Light Colors

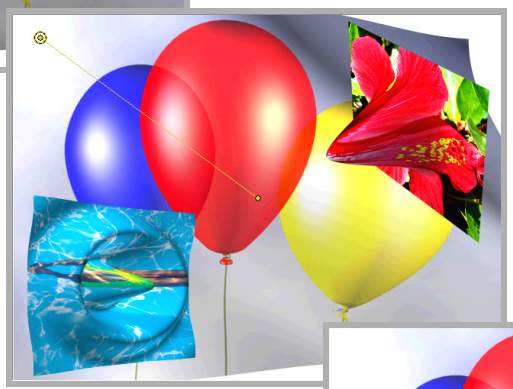
▶ The surrounding light can be set using the **Ambient** parameter in the **Color** tab.

Adjusting Effect of Surrounding Light

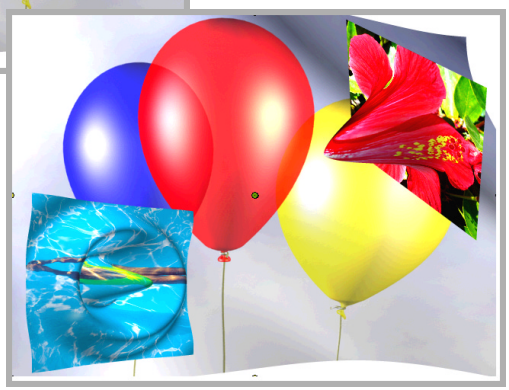


Ambient = -100

The shadow becomes stronger when the slider is moved to the left. The position of light on the image remains almost equally as bright.



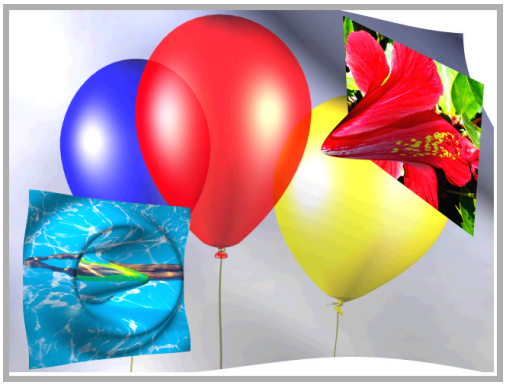
Ambient = 0



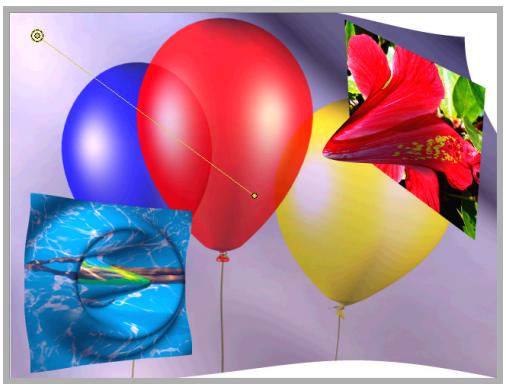
Ambient = 100

Coloring the Surrounding Light

▶ Select the **Ambient** tab in the **Effect Box**.
Adjust one or more colors using the slider or the color wheel and the chromaticity diagram.
A veil of color is placed over the object and at the same time the shadow effect is intensified as the quantity of light is reduced with stronger colors.

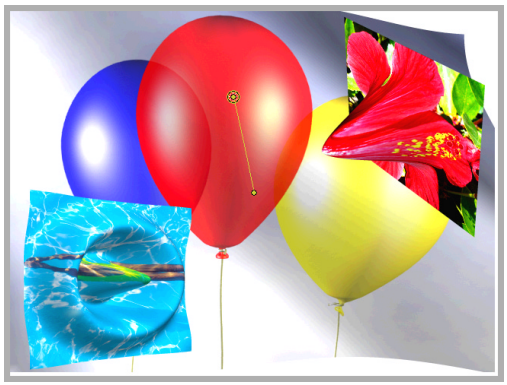


The parameter sliders and the color wheel and the chromaticity diagram used to color the surrounding light are found in the **Ambient** tab.

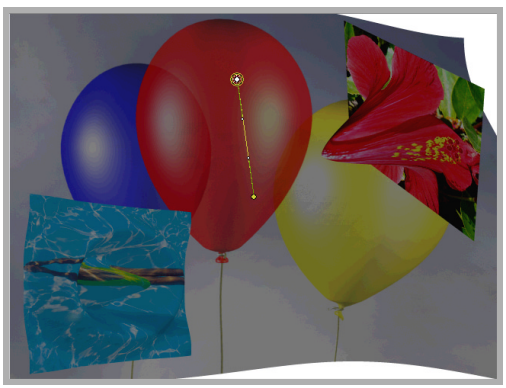


Adjusting Intensity of the Light

▶ The intensity of the direct light is set in the **Color** tab using the **Diffuse** slider.



The **Diffuse** slider is similiar to the dimmer of a lamp. The intensity of the illumination of all the objects placed under the light in the **Timeline** decreases.

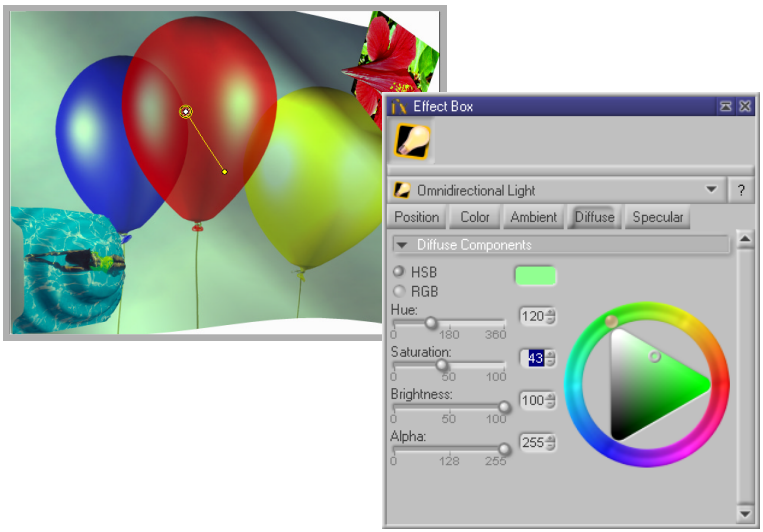


Coloring Light Source

In the **Diffuse** tab you are able to color the light source. The coloration can only be seen in bright areas. Dark areas and the shadows of the objects are not affected by the coloration.

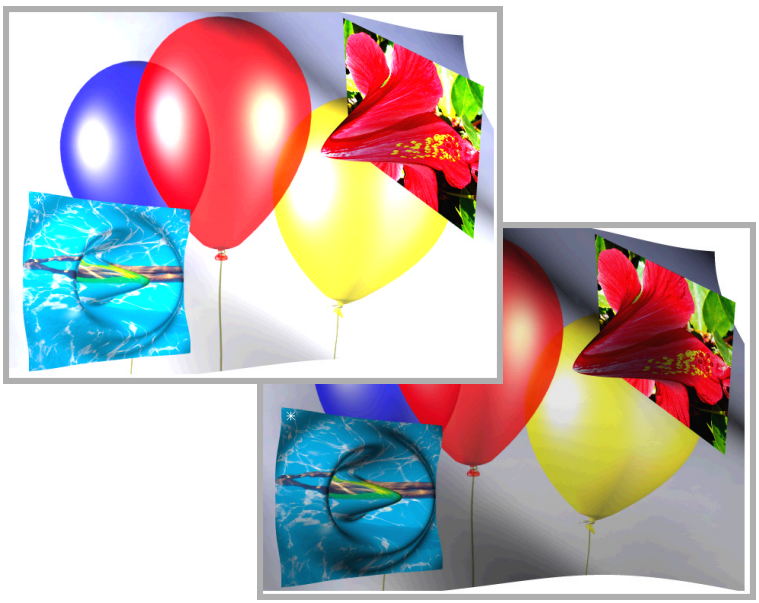
▶ Click the **Diffuse** tab. Using the sliders or the color wheel and the chromaticity diagram you can adjust one or more colors.

The **Diffuse** slider adjusts the intensity of the light. The **Diffuse** tab contains the parameter sliders needed to color the bright areas of the image.



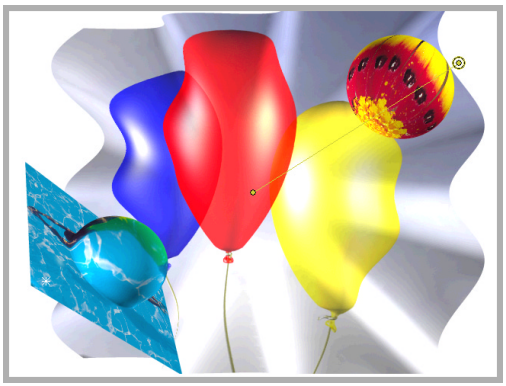
Reflected Light

In the **Specular** tab the color of the reflected light is determined. The parameter sliders in **Color** alter the intensity of the reflection of the illuminated object. Less of a reflection results in a weaker effect.

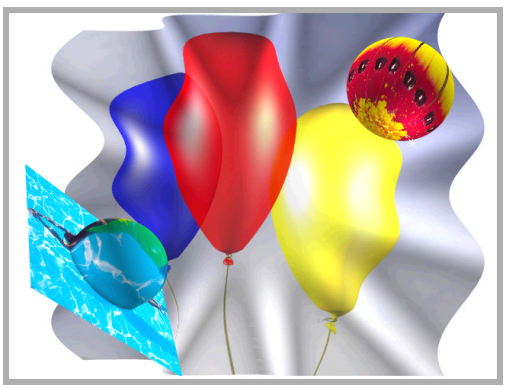


Applying Several Light Sources

If you want to illuminate an object with different light sources, you can place several **Light** objects onto the object. To intensify certain effects or moods you can apply different colors to them.



Objects are illuminated by one light.



A further light object causes sections of the object to appear brighter.

By applying different colors to the light sources (top right red, bottom green) you can make further alterations to the object.

Camera

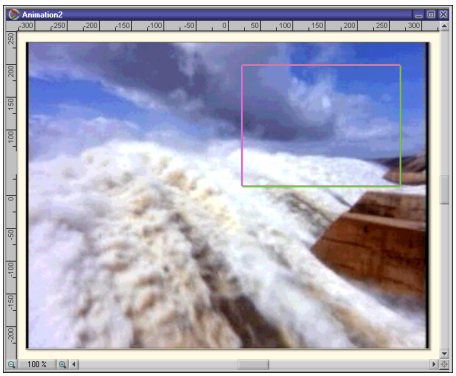
With his camera the cameraman selects which clips he wants the viewer to see. The fixed camera, which usually looks down on objects from above, can be moved around your **Canvas**.

The mobile camera determines the clip for each point in time of an animation. The new **Preview** image comes from the mobile camera which is placed in your **Timeline** like an object and can be moved exactly as such.

Inserting the Camera

- In the **Browser** select **Objects / Lights and Camera / Camera**. It can also be selected under **All Objects**.

Double-click or drag the object to insert it into the **Timeline**. The topmost track in the **Timeline** is always reserved for the **Camera**. One virtual camera can be used per animation. Therefore MoviePack provides only one track for the camera.



Changing Image Format of Camera

By moving the pointer or using the **Transformations** parameter you can determine the image format of the **Camera**. If you do not use the page ratio required for the **Preview** and video output, the playback will appear distorted.

Determining Position of Camera

The object **Camera** can be moved in exactly the same way as other objects. The **Camera** can be scaled, which is similiar to a zoom effect, it can also be rotated and moved on the **Canvas**. The selection and operation of the handles is explained in the 'Reference - Canvas' booklet. Information on numerical input can be found in the 'Reference - Effect Box' booklet. As with all objects, selecting the command **Unify** from the **Object** menu enables you to maintain the position, size and rotation of the **Camera** throughout the animation.

When you insert the **Camera** into the animation window it fills half of the **Canvas**. This is the equivilent of a zoom of 100%. The content of the border shows the area on which the **Camera** is focused.

If the **Camera** is rotated, the trajectory path (yellow) detaches itself from the object border (green). As with all objects the handles and trajectory path are still viewed from above. The object border displays the two-dimensional projection of the 3D movement.

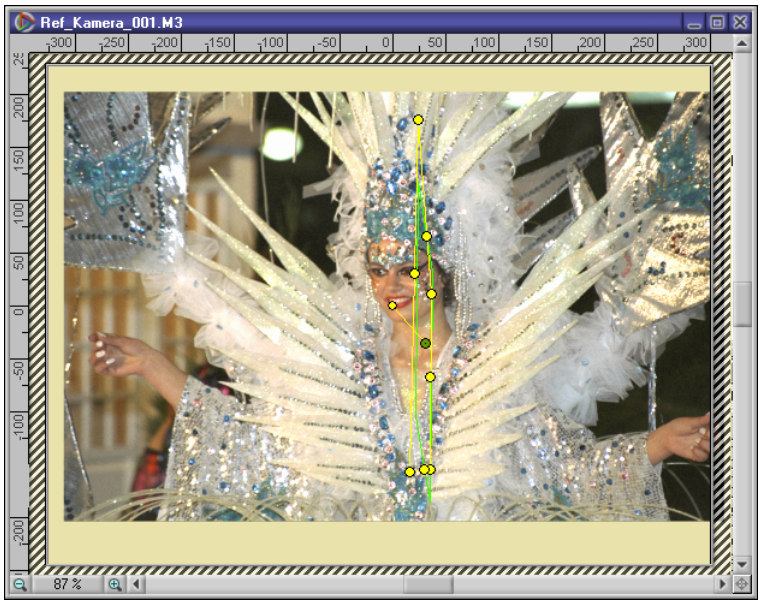
MoviePack is not a 3D raytracing program. It can display images in space - the view of an object from above like when using the stationary **Camera**.

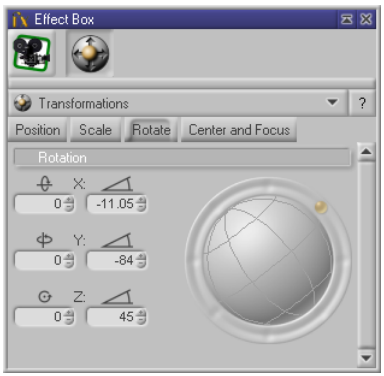
If the **Camera** is rotated, a distorted image appears. However if the object under the camera rotates, 3D effects are visible.

This means: If you rotate the camera 90 degrees, the object is not spatially displayed even if it contains a 3D effect.

Positioning Camera Vertically

The effect is similiar to what happens when you photograph a sheet of paper from the side, admittedly this is intensified by scaling. Instead of a thin rectangle an image-sized, distended view of the edge of the layers appears.



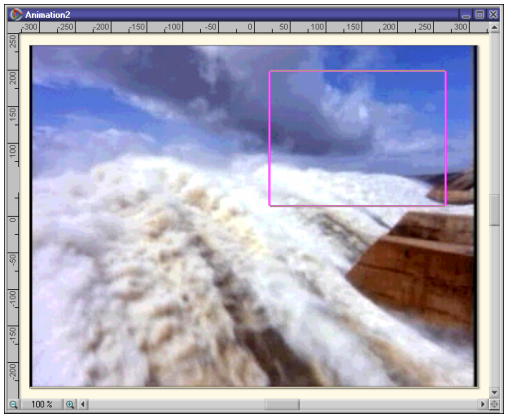


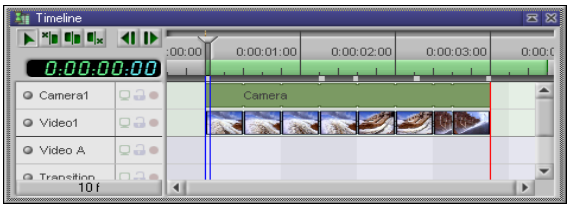
Camera rotated at 87° in Y direction. The area shown from the lens is very thin - the distortion in the preview very strong.

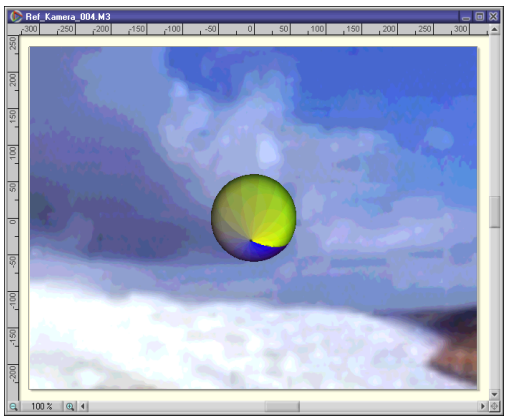
Superimposing Cameras

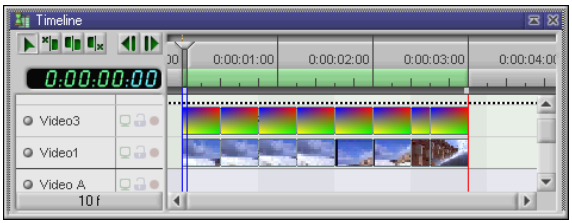
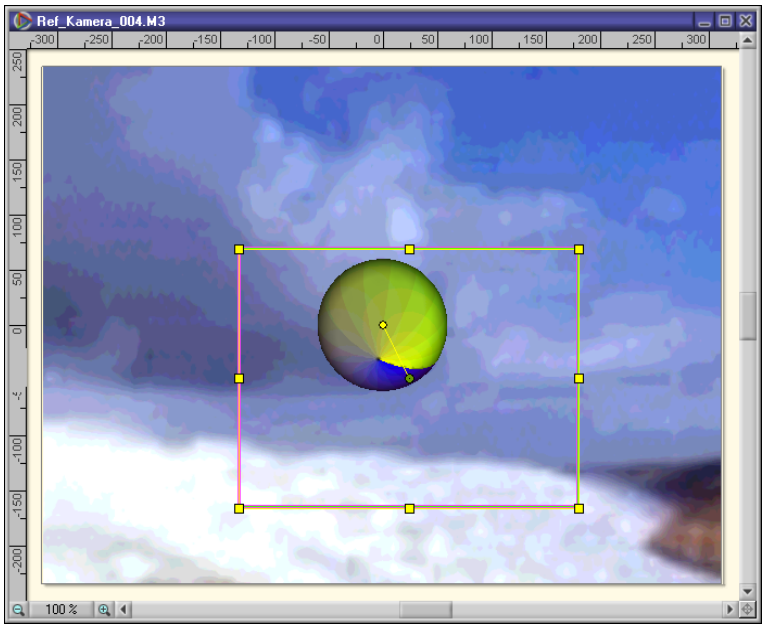
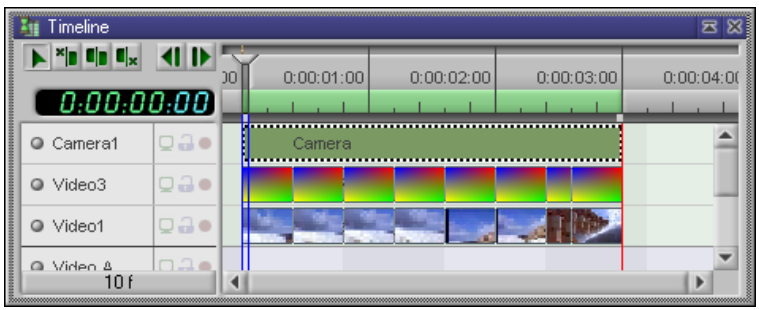
Each animation can contain a maximum of one vitrual **Camera**. When you have finished your animation this **Camera** can be saved as a scene and is then available as an object for further editing (see the 'Reference - Scenes' booklet). If these scenes are reintegrated in an animation, a new **Camera** can be used. New possibilities arise:

- Using a moving **Camera** the scenes can be superimposed with new objects which are not influenced by the **Camera**.









▶ A moving **Camera** can look on an already integrated **Camera**.