

RAY*flect*

# PhotoTracer



## User Manual

for **M**acintosh and **W**indows

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contained at the end of the RAYflect PhotoTracer™ User Guide.

### Credits

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- Objects designed by: Pierre Bretagnolle and Antoine Clappier

User Interface Design:

- Antoine Clappier

The RAYflect PhotoTracer™ user guide was created by Antoine Clappier, assisted by Clare Thirlway.



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## Trademarks

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## WELCOME

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### Introduction

Thank you for purchasing RAYflect PhotoTracer

This Photoshop extension gives you all the tools and effects needed to create amazing 3D scenes inside Photoshop. RAYflect PhotoTracer includes all the features found in thousands dollar worth 3D software: transparency, reflection, refraction, bump mapping, multiple light sources and much more. RAYflect PhotoTracer come with more than 230 original objects specially designed for CD-ROM content, packaging, web page design...

No matter you want to create a simple sphere or a complicated scene, PhotoTracer is the fastest and simplest way to do it. With RAYflect PhotoTracer, we reduced the complexity, not the quality.

---

## System Requirements

### Windows 95 / 98 / Windows NT

- Pentium, Pentium II, Pentium Pro based PC
- Windows 95, 98, Windows NT Service Pack 3 or later
- Color Display, at least 16-bit
- Application that 100% supports Adobe Photoshop 3.0.5 filter

### MacOS

- PowerPC based Macintosh
- MacOS System 7.5 or later
- Color Display, at least 16-bit
- Application that 100% supports Adobe Photoshop 3.0.5 filter

---

## Installation

### Windows 95 / 98 / Windows NT

First download the archive on the RAYflect Web site.

---

To install RAYflect PhotoTracer:

- 1 Unzip the archive
- 2 Run the installer
- 3 Follow the on-screen instructions to install RAYflect PhotoTracer.

### MacOS

First download the archive on the RAYflect Web site.

---

To install RAYflect PhotoTracer:

- 1 Unstuff the archive
- 2 Copy the "PhotoTracer" folder to the 'Plugins/Filters' folder located in your Photoshop folder

---

## Removing Extensions

### Windows 95 / 98 / Windows NT

To remove RAYflect PhotoTracer, simply run the installer.



## MacOS

To remove RAYflect PhotoTracer, simply drag the "PhotoTracer" folder in the trashcan.

The "PhotoTracer" folder is in the 'Plugins/Filters' folder located in your Photoshop folder.

---

## Getting Technical Support

For Technical Support or for more information about RAYflect's products, see our World Wide Web site on the internet:

<http://www.rayflect.com>



## TUTORIALS

---

### Welcome

Welcome to the RAYflect PhotoTracer tutorial. This tutorial is designed to introduce you to all the major features and functions in RAYflect PhotoTracer. The main goal of the tutorial is to teach you the techniques you need to know to create 3D illustrations.

Each section is self-contained so you can start the tutorial at any point. But we advise the beginner to start from lesson 1.

The tutorial uses various files which can be downloaded from the RAYflect site in the RAYflect PhotoTracer download section:

<http://www.rayflect.com>

---

## Manipulating a single object

### Launching RAYflect PhotoTracer

The first thing to do is to start Photoshop, create a new document then run RAYflect PhotoTracer.

---

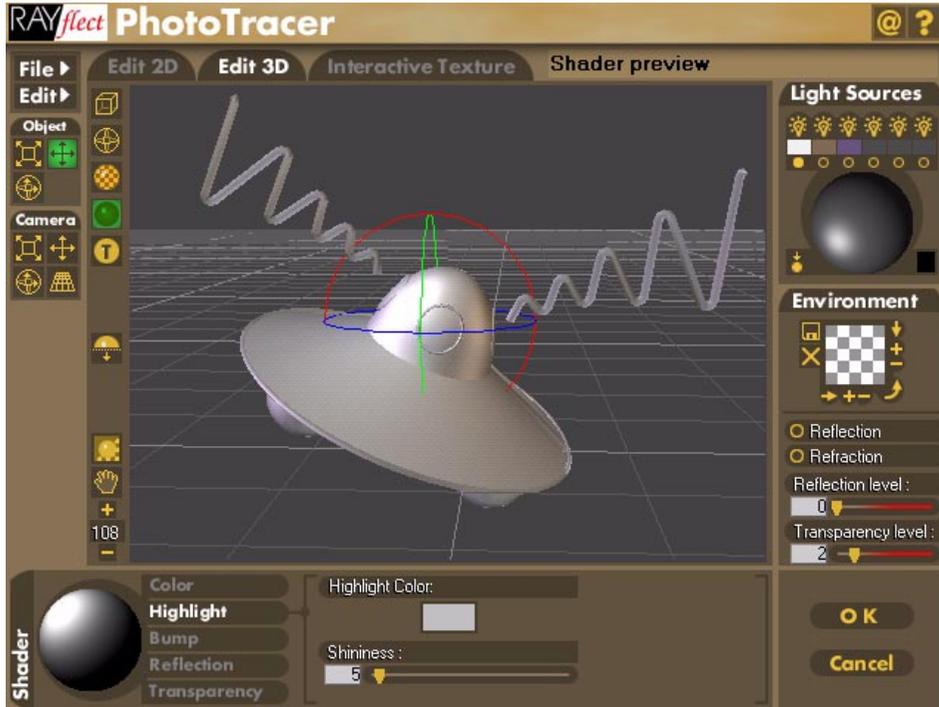
*Note: In the tutorial we use Photoshop 5.0.2 as a host application. But the tutorial can be used with other versions of Photoshop or other hosts such as Painter, Photo-Paint, etc.*

---

To run RAYflect PhotoTracer:

- 1 Launch **Photoshop**.
- 2 Create a new RGB document.
- 3 Choose **Filter>RAYflect>PhotoTracer**
- 4 Click cancel button to return to Photoshop





## Loading a simple 3D object

In the following lesson we will use a small 300 by 300 pixels document.

To start the lesson:

- 1 Launch **Photoshop**.
- 2 Create a new 300 by 300 pixels **RGB document**.
- 3 Choose **Filter>RAYflect>PhotoTracer**

The first step is to load a 3D Object in the RAYflect PhotoTracer 3D Workspace. This 3D Workspace is where all objects are displayed, assembled, and manipulated.

To load an object:

- 1 Click with the left mouse button on **File>** button
- 2 Choose **Open** item
- 3 With the file requester, select **Tutorials/Lesson1/Tore.ptc**



### File and edit menu

A blue torus is now visible in the middle of the Workspace. It is displayed using the default quality: wireframe. To get a more realistic preview of the 3D objects,

RAYflect PhotoTracer offers different **rendering quality modes**:

- Bounding Box mode (Objects are drawn as boxes).



### Bounding Box Mode Button

- Wireframe mode (Only edges of objects are drawn).



### Wireframe Mode Button

- Flat shaded mode (Faces of the objects are drawn flat, with highlights)



### Flat Mode Button

- Gouraud shaded mode (Faces are drawn smoothed, with highlights)



### Gouraud Mode Button

- Textured mode (Transparency and textures are displayed)



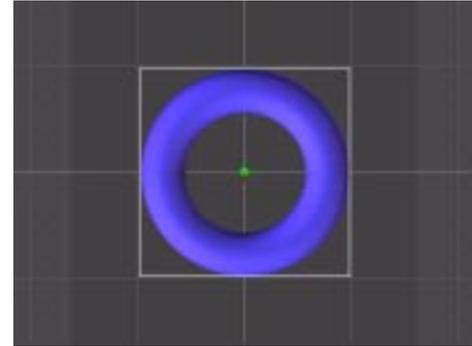
### Textured Mode Button

---

#### To change the preview quality

- 1 Simply click on one of the **Preview Quality** radio buttons

To get a smooth preview, now choose Gouraud Shaded mode. Your Workspace should look like this:



Workspace in Gouraud Mode

### Editing a 3D object

Let's see how you can move, rotate and resize a 3D object. To move the torus simply click and drag.

---

#### To move an object:

- 1 Click on the object to select it
- 2 Click and drag to move the object

To rotate the torus select it, then right click (ctrl click on Macintosh) and select Rotate on the "**Ghost Menu(tm)**". The



Ghost Menu(tm) is the best way to manipulate RAYflect PhotoTracer's objects. The Ghost Menu(tm) is a new generation of user interface; every commonly-used command is accessible directly from the Working Window, in only one mouse click.



### Ghost Menu

We advise you to get used to launching commands from the Ghost Menu(tm). Doing this will dramatically reduce your design time. But if you prefer, you can also use the Object command icons located to the left of the window.

---

To Rotate an object or a selection with the virtual trackball:

- 1 Make sure the object is selected.

- 2 Select the Rotate Objects tool or Rotate from the Ghost Menu(tm)
- 3 Click and drag to rotate to a new orientation



### Rotate Tool



### Ghost Menu Rotate Tool

---

To Rotate an object or a selection around only one axis:

- 1 Make sure the object is selected.
- 2 Select the X,Y or Z button near Rotate in the Ghost Menu(tm).
- 3 Drag the mouse horizontally.

To scale your torus do exactly as with the rotation, display the Ghost Menu(tm) but this time choose the Scale item.

---

To Scale a selection:

- 1 Make sure the object is selected.
- 2 Select the Scale Tool in the toolbar or the Scale item in the Ghost Menu(tm)
- 3 Drag the mouse horizontally to change the object size



### Scale Tool



### Ghost Menu Scale Tools

---

To Scale a selection on only one local axis:

- 1 Make sure the object is selected.
- 2 Select the X,Y or Z button near Scale in the Ghost Menu(tm).
- 3 Drag the mouse horizontally.

To get used to the Ghost Menu(tm), move, scale and rotate the torus several

times. If the torus gets too distorted, you can go back to its previous state using the multiple Undo and Redo commands. There are 32 levels of undo.

---

To Undo the last object manipulation:

- 1 Go to **Edit Menu**.
- 2 Select **Undo**.
- or
- 3 Hit Control/Command Z.

---

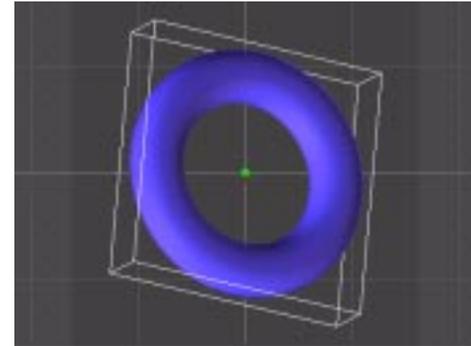
To Redo the last undone object manipulation

- 1 Go to **Edit Menu**.
- 2 Select **Redo**.
- or
- 3 Hit Control/Command Y.



### *Edit Menu*

Your Workspace should now look like this:



*Rotated and scaled torus*

### **Shading 3D object**

We have seen how to modify the geometry of the objects. Let's see now how we can edit their shading.

Shaders are used in order to apply surface properties to objects. The Shader determines whether the object is shiny or dull, rough or smooth, transparent or opaque, etc. By combining different surface properties you can completely change how an object looks.



First we are going to change the color of our torus. Below the Workspace you will find the **Shader Palette**. Click on the **Color Tab**.



*Shader Palette*

Since you are going to modify the surface of your object, you should adjust the Preview Quality to Gouraud Shaded mode.

---

To specify a color as Color Channel:

- 1 Select the **Use Color** radio button.
- 2 Click on the **Color Swatch**.
- 3 A pop-up color window appears containing a color spectrum.
- 4 Release the mouse button when the mouse cursor is on the color you want.

---

To numerically specify a color as Color Channel:

- 1 Select the **Use Color** radio button.
- 2 Click on the **Color Swatch** while holding the Ctrl-Key down.
- 3 The standard color picker should appear.
- 4 Select or enter the color you want and select OK.

Apply a purple color to the torus. The torus is now purple but still lacks a shiny and realistic surface. In the real world objects show highlights when they are illuminated. These bright spots are reflections of light sources onto the material.

Plastic surfaces show dimmed and large highlights, unlike metallic objects whose highlights are small and bright; other materials like stone or concrete do not produce highlights.

Click on the **Highlight Tab** and change the highlight color to white by

clicking on the color swatch (do not forget to select the torus before doing this).

---

To change highlight color:

- 1 Click on the **Highlight Color** swatch.
- 2 A pop-up color window appears containing a color spectrum.
- 3 Release the mouse button when the mouse cursor is on the color you want.

---

To specify numerically highlight color

- 1 Click on the **Color Swatch** while holding the Ctrl-Key down.
- 2 The standard color picker should appear.
- 3 Select or enter the color you want and hit the OK button.

Modify the Shininess and watch the result in the Workspace.

---

To change the shininess



- 1 Select an object
- 2 Drag the thumb of the **Shininess Slider**.

To get a flashy purple plastic object set shininess to 5. The Torus should now look like this:



*Purple Torus with highlights*

Use the Ghost Menu to rotate the torus several times. As you can see, the torus now reflects the light in a much more realistic way.

## Rendering

You are now ready to render your first 3D object in Photoshop. Click OK to go back to Photoshop, the torus is automatically rendered in the document.

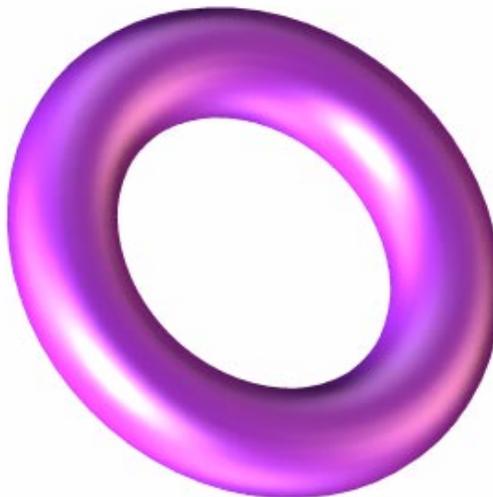
---

*To render 3D objects, RAYflect PhotoTracer uses one of the most advanced rendering technologies: **Hybrid ScanLine RayTracing** engine with oversampling*

*and **SAT antialiasing**. But all you want to know is that this new RAYflect rendering engine delivers a high quality image in a short space of time!*

---

Wait a few seconds, your purple torus now appears in your document. Zoom on the image to see the subtle light interactions and high quality antialiasing on the edges of the torus.



## Lesson 2: Texture mapping and camera

To start this lesson:

- 1 Create a new 400 by 300 pixels RGB document in Photoshop.
- 2 Launch RAYflect PhotoTracer.
- 3 Open Cube.ptc, located in **Tutorials/Lesson2/**.

### Using the Edit 3D Mode

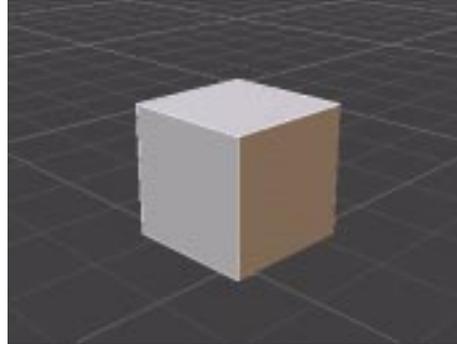
Now that you know how to manipulate 3D Objects in a 2D Workspace, let's jump into full 3D! To do this click on the **Edit 3D Tab** at the top of the workspace.



#### *Edit 3D Tab*

In Edit 3D Mode, you see your 3D scene as through the viewfinder of a real camera. The cube is now displayed using

perspective distortion: it looks like a real live cube. Your Workspace should look like this:



#### *Lesson 2 Workspace*

The Edit 3D mode lets you manipulate the camera and the objects in the 3D world.

In Edit 3D mode a new toolbar appears, labeled **Camera**, containing four tools:

- Zoom
- Pan
- Dolly
- Roll

- Set camera Focal



#### *Camera Tools*

To start with, you are going to rotate the camera around the cube. To do this use the Dolly tool. The Dolly tool is used to rotate the camera around the view-point. It acts exactly as if you were using a virtual trackball.

To use the Dolly:

- 1 Select the Dolly tool from the Camera Toolbar OR select Dolly from the Ghost Menu(tm).
- 2 At this stage, the mouse cursor will reflect the tool used.
- 3 Click in the Working Window and drag the mouse pointer to rotate the view.



### Dolly Tool



### Ghost Menu Dolly Tool

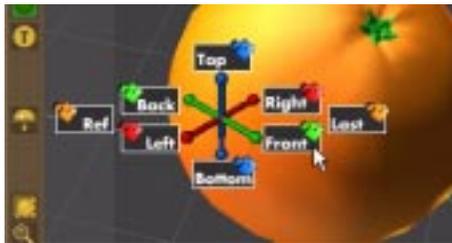
We advise you to use the Ghost Menu(tm) (see Lesson 1). You will go much faster selecting the commands in the Ghost Menu(tm) than switching back and forth between the different Camera and Object tools.

Using the Ghost Menu, you can also Zoom, Pan, Roll and set camera Focal. Try these different commands. If you lose the cube, use the Alternate Ghost Menu to reset the camera.

By holding the Alt/Option key while activating the Ghost Menu(tm), you have access to the Alternate Ghost Menu(tm). The **Alternate Ghost Menu** lets you change the point of view of your viewing camera.

The **Alternate Ghost Menu** lets you change the point of view of your camera.

- **Ref:** Reference camera (perspective view)
- **Left/Right:** Left and Right views
- **Top/Bottom:** Top and Bottom views
- **Last:** returns to the last perspective view.



### Alternate Ghost Menu

To reset the camera:

- 1 Hold Alt key and right click (Ctrl click on Macintosh).
- 2 Select Ref item

## Texture Mapping

RAYflect PhotoTracer allows you to put a 2D image on the surface of your objects: **texture mapping**. This 2D image can be a scanned photograph or paint-type illustration created in Photoshop. Used effectively, texture maps can lend your shaders an unparalleled realism. Many complex objects are nearly impossible to simulate through other means.

RAYflect PhotoTracer lets you load either a JPEG file or BMP file.

---

To use an image as Color Channel:

- 1 Select the **Use Texture** radio button.

If no texture was loaded, a standard file selector is displayed, letting you choose the image file you want.

---

To change the texture used as Color Channel

- 1 Click on the little **Disk Icon**.
- or



1 Activate the local menu (right mouse button click on Windows/ Command-Click on Macintosh) and choose **Load**.

A standard file selector should appear, letting you choose the image file you want to load.

Once the file is loaded, the texture swatch should display a preview of your image.

Both the objects sharing this shader and the Shader Preview should change accordingly.



#### Disk Icon

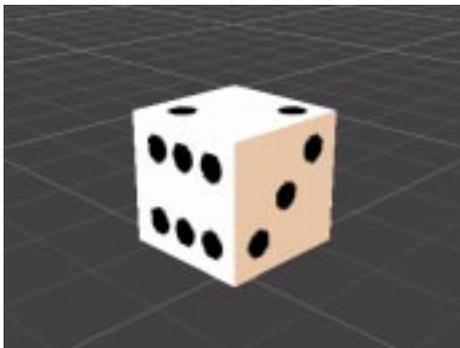
Select your cube, click on the disk icon in the Color Palette, open **DiceMap.jpg** in **Tutorials/Lesson2/**. Now your cube has a dice texture map.

To see the texture use the **Textured mode**:



#### Textured Mode Button

Your Workspace should look like this:



#### Workspace in Textured Mode

*Note: Textured mode and Gouraud-shaded mode show details of the shape and color of your objects, but take longer to calculate and draw. To increase RAYfect PhotoTracer efficiency, you might want to work in Wireframe at the outset of a project,*

*then switch to the Textured mode as specific details (like texture) become important.*

You can rotate, tile and flip the texture, see Color Channel for more information.

The Textured mode just shows you a preview of the textured objects. In RAYfect PhotoTracer you do not have to hit the OK button to render then switch back to PhotoTracer to modify something... You can render your scene directly within the RAYfect PhotoTracer's Working Window, with the best final quality.

To render the image with the final quality:

Click on the **Render Image Button**



#### Render Image Button

While the image is rendering, you can abort the rendering by hitting the ESC key (or the Command-. (dot) key combination on Mac).



Your Workspace should look like this:



Rendered Cube

## Bump Mapping

Rough surfaces are extremely difficult to model and lead to complex objects. Imagine the irregularities of an orange skin: it would be impossible to geometrically model each irregularity by hand.

RAYflect PhotoTracer simulates the variations on the surface of an object in a really efficient way with the **Bump Channel**.

By placing a picture in the Bump Channel, you can disturb a smooth surface to add irregularities.

---

*Note: Bump Channel does not modify the surface of the geometric objects but rather changes the angle of incidence of the light at certain points of the surface, thus providing a 'bumpy' effect. As this is a trick of RAYflect PhotoTracer, the edges of the objects remain smooth.*

---

To simulate bumps, the texture used in the Bump Channel (also called bump map) must specify a variation between adjacent pixels. This means that if your image is filled with a plain color, it will not produce any bumping. As color information in the image is not used by RAYflect PhotoTracer (what is important is the relative changes between adjacent pixels) it is often better to use grayscale pictures as bump maps.



Bump Channel

If no bump map is loaded, the bump map swatch should display a light checker pattern; otherwise you can see a preview of your image.

RAYflect PhotoTracer lets you load either a JPEG file or BMP file.

---

To change the bump map:

- 1 Click on the little **Disk Icon** near the bump map swatch.
- or
- 1 Activate the local menu (right mouse button click on Windows/ Command-Click on Macintosh), and choose Load.

A standard file selector should arise, letting you choose the image file you want to load.

Once the file is loaded, the bump map swatch should display a preview of your picture.

Both the objects sharing this shader and the Shader Preview should change accordingly.



*Disk Icon*

Select your cube, click on the disk icon in the Bump palette, open **DiceBump-Map.jpg** in **Tutorials/Lesson2/**.

Click on the Render Image Button to see the result.

In order to achieve subtle effects when modifying a surface, RAYflect PhotoTracer provides you with a slider to change the intensity of the Bump effect.

This slider, whose range is -3 to +3, lets you increase the bump effect (high values), soften the bump effect (low values), and even inverse the bump effect (negative values).

---

To change the bump intensity:

- 1 Drag the thumb of the bump intensity slider.
- 2 Both the objects sharing this shader and the Shader Preview should change accordingly.

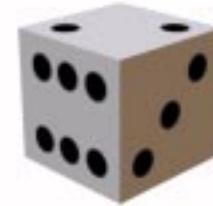


*Bump Intensity Slider*

To create little holes around the black dots of the dice, set the intensity to: -1.3.

Click on the Render Image Button to see the result.

Your Workspace should look like this:



### Saving your work

Using the Ghost Menu(tm), zoom, dolly the camera until you get a good view of your dice. When you are done, you can save your scene using the File Menu. If later you want to use the dice again, you will just have to reload the file created during this lesson.

---

To save your scene in a new file:

- 1 Click with the left mouse button on the **Edit** button.
- 2 Choose **Save As**.



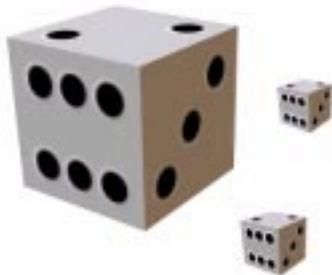
- 3 When the standard save dialog box shows up, enter the file name.
- 4 Click Save.

Save your scene as **Dice.PTC** in the **Tutorials/Lesson2** folder.

Click OK to render the dice.

Even if you don't save your scene, each time you hit the OK button the scene is automatically saved in the Current File. So, next time you launch RAYflect PhotoTracer you will find your latest scene. The Current File is also used to rerender a scene without launching the RAYflect PhotoTracer interface. If the selection has changed, RAYflect PhotoTracer will resize your scene accordingly.

In Photoshop create a selection using the Rectangular Marquee Tool and hit ctrl F or Command F to rerender the dice.



*Rendered cubes*

---

## Lesson 3: Reflection, transparency and lights

---

### To start this lesson

- 1 Create a new 400 by 300 pixels RGB document in Photoshop.
- 2 Fill the background with a neutral dark gray (R=64, G=64, B=64)
- 3 Launch RAYflect PhotoTracer.

- 4 Open **Dollar.ptc**, located in **Tutorials/Lesson3/**.

### Setting up Lights

The final appearance of your scene depends greatly on how you light it. A good lighting scheme (lights' positions and colors) can dramatically increase the readability and the atmosphere of a rendered scene. Like in real world photography, it is very important to take time to set up the light.

RAYflect PhotoTracer lets you adjust up to six infinite directional light sources, and one ambient light.

---

*Note: Infinite directional light sources are outside the RAYflect PhotoTracer 3D Workspace (thus their emitting points are not visible) and cast parallel light rays in the 3D Workspace.*

---

All the light controls can be found in the **Light Sources palette**.





*Light Sources Palette*

Lighting effects will become visible in the Working Window when RAYflect PhotoTracer is configured on Flat shaded preview and above. In the lesson use the Gouraud shaded mode.

)



*Gouraud Mode Button*

The Dollar.ptc file has only one light source turned on. Turn it off by clicking on the Bulb Light Icon: your object is black. Turn it on again to see the difference. As you can see, manipulating light

sources in RAYflect PhotoTracer is as simple as real light sources.

---

To turn off a light source:

- 1 Make sure the light you want to switch off is actually enabled.
- 2 Click on the **Light Bulb Icon**.
- 3 The icon should change to a switched off light bulb.
- 4 The lighting of the scene viewed in the Working Window should be updated accordingly.



*Bulb Light Icon OFF*

---

To turn on a light source:

- 1 Make sure the light you want to switch on is actually disabled.
- 2 Click on the light bulb icon.
- 3 The icon should change to a switched on light bulb.



*Bulb Light Icon ON*

Now click on the color swatch below the first Light Bulb Icon and choose a bright color. Try with another color and watch the result in the 3D Workspace. To finish, set the first light source color to white.

---

To Change the color of a light source:

- 1 Click on the **Light Color Swatch**.
- 2 A pop-up color window appears containing a color spectrum.
- 3 Release the mouse button when the mouse cursor is on the color you want.



*Light Color Swatch*

Turn on the second light source: orange highlights appear on the borders of the objects. To edit the position of the light source click and drag the virtual light sphere in the Light Source Palette.

To set the position of the light, imagine the **light sphere** as a glass ball surrounding your scene. The highlight shows where the light shines through the glass, toward the center of your scene.

As you can only see one hemisphere of the virtual light sphere at a time, there is a special control which is used to inverse the light position. By default when this control shows an arrow from top to bottom, the light source is above the scene, and when the arrow is in the opposite direction, the light source is under the scene.

As there are six light sources and only one virtual light sphere, each light has a selector item graphically represented as a yellow dot. If the **yellow dot** is under the fourth light source for instance, it means that the light sphere will actually show the position of the fourth light.

---

To select the light source to be edited:

- 1 Click on the **light source selector** under the light source color swatch.
- 2 The light source selected has a yellow spot as light source selector.

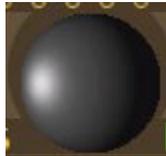


*Light Source Selector*

---

To set the position of a light:

- 1 Drag the highlight on the surface of the **light sphere** to position the light source.
- 2 The lighting of the scene viewed in the Working Window should be updated accordingly.



*Light Sphere*

Try turning the different light sources on and off, changing their color and position to get the following 3D Workspace:



*Workspace*

To get exactly the same light scheme, open the file **Dollar2.ptc** in the **Tutorials/Lesson3/** folder.

## Reflection and transparency

Click on the Render Image Button to see the result. Your object looks like a dull metal object. Let's add some reflections!

One of the key features of RAYfect PhotoTracer is that it can handle true reflections and transparency in real time. To edit reflection and transparency, click on the Interactive Texture Tab located at the top of the 3D Workspace. The Interactive Texture Renderer renders the current scene with the final quality, storing some useful information needed to perform the shading in real time.

---

To activate the Interactive Texture Renderer:

- 1 Simply click on the Tab labeled 'Interactive Texture'
- 2 Click on the black image in the center of the window
- 3 Wait a few seconds as the image is rendered
- 4 An image of your scene rendered with the final quality should appear

Click on the object to edit its shader.

To get a realistic mirror-like object, first turn its color to black. Click on the Color

Tab in the Shader Palette and set the color to black.

Now click on the Reflection Tab and set the color to a light gray: the object reflects its surroundings.



*Reflection channel*

---

To change reflection color:

- 1 Click on the **reflection color swatch**.
- 2 A pop-up color window appears containing a color spectrum.
- 3 Release the mouse button when the mouse cursor is on the color you want.

The Workspace should look like this:



*Interactive Texture Mode*

A default Environment is used: it is a bi-gradient, simulating a sky and a ground. The Environment is a great way to improve objects' reflections.

Imagine that the **Environment map** is projected onto the inside of a big sphere surrounding your scene. Any reflected objects will reflect this map.

The Environment is really useful when your scene contains highly reflective objects (like chrome, or metal objects). Rendering reflective objects without a good Environment map will give dull effects on objects (since there is nothing

to reflect). Chrome and metal effects are best achieved with a good Environment map, for instance a landscape image.

RAYflect PhotoTracer lets you select an image as the Environment, and lets you rotate, flip and tile it.

---

To change the Environment map:

- 1 Click on the little disk icon near the Environment map swatch.
- 2 A standard file selector should appear, letting you choose the image file you want to load.
- 3 Once the file is loaded, the Environment map swatch should display a preview of your picture.



*Environment Map*

Load the **Environm.jpg** image located in **Tutorials/Lesson3/** folder. Now the object looks much more realistic thanks to this new environment.

To get a warmer effect, set the reflection color light to orange/yellow. The dollar letter seems to be made of gold. The Workspace should look like this:



*Interactive Texture Mode*

In the Interactive Texture mode you can also see transparency. Click on the **Transparency tab** in the Shader Palette. Set the color to a 50% gray.



*Transparency Channel*

---

To change transparency color:

- 1 Click on the reflection color swatch.
- 2 A pop-up color window appears containing a color spectrum.
- 3 Release the mouse button when the mouse cursor is on the color you want.

To finish this lesson, load the **Dollar3.ptc** file located in the **Tutorials/Lesson3/** folder.

Click OK to render.



---

## Lesson 4: Building a scene

---

To start this lesson

- 1 Create a new 400 by 300 pixels RGB document in Photoshop.
- 2 Fill the background with a neutral dark gray (R=64, G=64, B=64)
- 3 Launch RAYflect PhotoTracer.
- 4 Open **Button.ptc**, located in the **Tutorials/Lesson4/** folder.

In the lesson use the Gouraud shaded mode.)



*Gouraud Mode Button*

A scene is made up of several 3D objects. To insert a new object in a scene use the **Insert Item** in the **File Menu**.

---

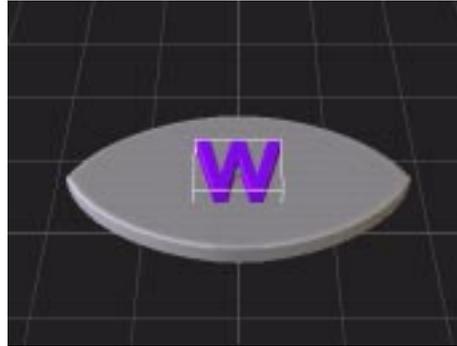
To Insert objects into a previously created scene:



- 1 Click with the left mouse button on the Edit button.
- 2 Choose Insert.
- 3 Select in the drop-down list the file format you want to open.
- 4 Browse your hard-disks, and select a file (either a .PTC file or a .3DS file).
- 5 Select Open.

Insert the **W.ptc** file located in the **Tutorials/Lesson4/** folder.

Your 3D Workspace should look like this:



We are going to create the www acronym. Select the letter W. To duplicate, hit ctrl d or command d, then drag to the left.

---

**To duplicate a selection:**

- 1 Select any objects
- 2 Choose **Edit Menu -> Duplicate (Ctrl/Command-d)**
- 3 The objects are duplicated and are in the same location as the originals.

You can also Copy, Cut and Paste using the Edit Menu.

Duplicate W again then drag to the right.

Your 3D Workspace should look like this:



When manipulating multiple objects, it is easier to manipulate only one entity. So it is possible to group several objects, and manipulate them exactly as if they were only one object.



Grouped objects have blue bounding boxes while selected, unlike 'stand-alone' objects whose bounding boxes are white.

To group a selection:

- 1 Choose **Edit Menu** -> **Group** (Ctrl/Command-g).
- 2 The objects forming the selection are grouped together.

Shift select the three letters then select Group in the Edit Menu or hit ctrl g or command g. Now the three letters www can be moved, scaled or rotated.

Reduce the size of the grouped object, drag it to the top of the button.

Hit OK to render.

## Lesson 5: Layer and layer effects

One of the most interesting features in RAYflect PhotoTracer is that you are working in Photoshop! When an image is rendered in other 3D software, you cannot move the objects, change their colors, add, remove shadows, etc. RAYflect PhotoTracer handles the alpha channel: this means you can render your 3D objects in multiple layers.

The antialiasing of PhotoTracer objects are done with the alpha channel, so you can freely move the objects around, raise or lower the layers, add shadows or glows with Photoshop 5's Layer Effects.

To start this lesson

- 1 Open in Photoshop the **Background.jpg** file located in the **Tutorials/Lesson5/** folder.
- 2 Create a new layer.
- 3 Launch RAYflect PhotoTracer.

- 4 Open **Mars.ptc**, located in the **Tutorials/Lesson5/** folder.

Click OK to render.

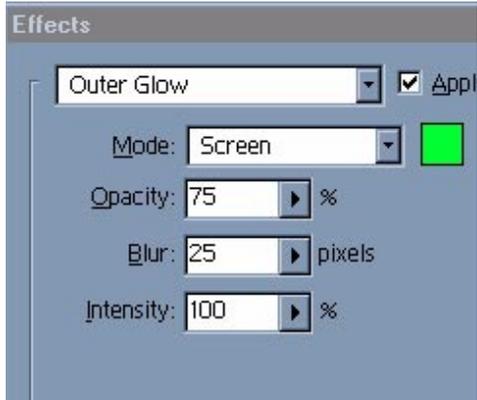
RAYflect PhotoTracer renders the flying saucer in the transparent layer. The antialiasing (border of the object) is done using levels of transparency, so the 3D object's borders always blend perfectly with the background. If you wish you can change the background and you will not have to render again the 3D objects in the transparent layer.

You can also move the flying saucers around: the borders still blend with the background.

If you have Photoshop 5, you can use the Layer Effects to add special effects to your objects.

Select **Layer>Effect>Outer Glow** enter the following settings:





*Outer Glow Settings*

Your image should look like this:



*Flying Saucer with glow*

Create a new layer and launch PhotoTracer.

Select the flying saucer with the Ghost Menu, reduce its size and rotate it.

Click OK to render.

Add a green glow and move the smaller flying saucer behind the first one.

Repeat the operation to create a third flying saucer in a third layer.

Your image should look like this:



*Image with three layers*

As you can see the combination of the strengths of Photoshop and RAYflect PhotoTracer let you create 3D illustrations with an unparalleled simplicity and speed. No other 3D software lets you change the background and position of your objects, add or remove glow and shadow, etc., without re-rendering the entire scene.

This is especially true when working with high resolution images: sometime re-rendering an image can takes hours with other 3D software. With RAYflect



PhotoTracer you can rerender a single object in one of the layers and it will take from a few seconds to a few minutes.

When working with a large scene we strongly advise you to break it into multiple layers and objects. This way you will work much faster and will have more freedom to express your ideas.

---

## Lesson 6: Cartoon rendering

This last lesson is more a tip than a tutorial. It will show you that by combining Photoshop features and RAYflect PhotoTracer, you can go off the beaten track of usual 3D!

**To start this lesson:**

- 1 Create a new 800 by 600 pixels RGB document in Photoshop. The background must be a pure white.

- 2 Launch RAYflect PhotoTracer. Open **Mouse.ptc**, located in the **Tutorials/Lesson6/** folder.
- 3 Select the gruyère cheese (RAYflect PhotoTracer was created by French developers so of course there is cheese in this product!).
- 4 Set the Color to 100% black.
- 5 Set the Highlight color to 100% white.
- 6 Set the Shininess to 0.
- 7 Drag and drop the shader on the other objects in the scene (the mouse and the eyes of the mouse).

---

**To drag and drop a shader:**

- 1 Click in the Shader Preview (the gray sphere in the Shader palette).
- 2 Hold the mouse button and drag over an ungrouped object.
- 3 Release the mouse button.

Click OK to render.

Your image should look like this:



*Rendered Mouse*

---

**In Photoshop:**

- 1 Choose **Image>Select>Threshold**.
- 2 Set **Threshold Level** to 230
- 3 Click OK.

You now have a black and white image:



*Black and white image*

With the **Magic Wand** select a black part of the image.

Then choose **Similar** in **Select** menu.

The whole of the black area of the image is now selected.

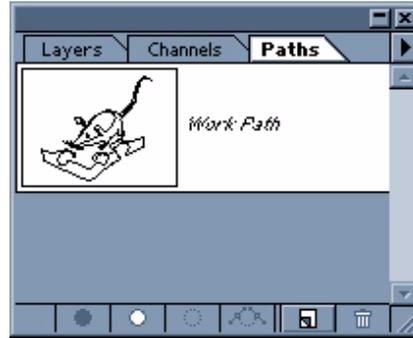
---

Go to the **Paths** palette:

1 Choose **Make Work Path**.

2 Set **Tolerance** to 1.0 pixels, click OK.

3 Deselect the Work Path.



*Paths Palette*

Clear your image (the image must be completely white).

Select the Work Path in the Paths palette.

Click on the “Loads Path As Selection” button (third button at the bottom of the palette).

Deselect path.

Hit Alt BackSpace to fill the selection with black.

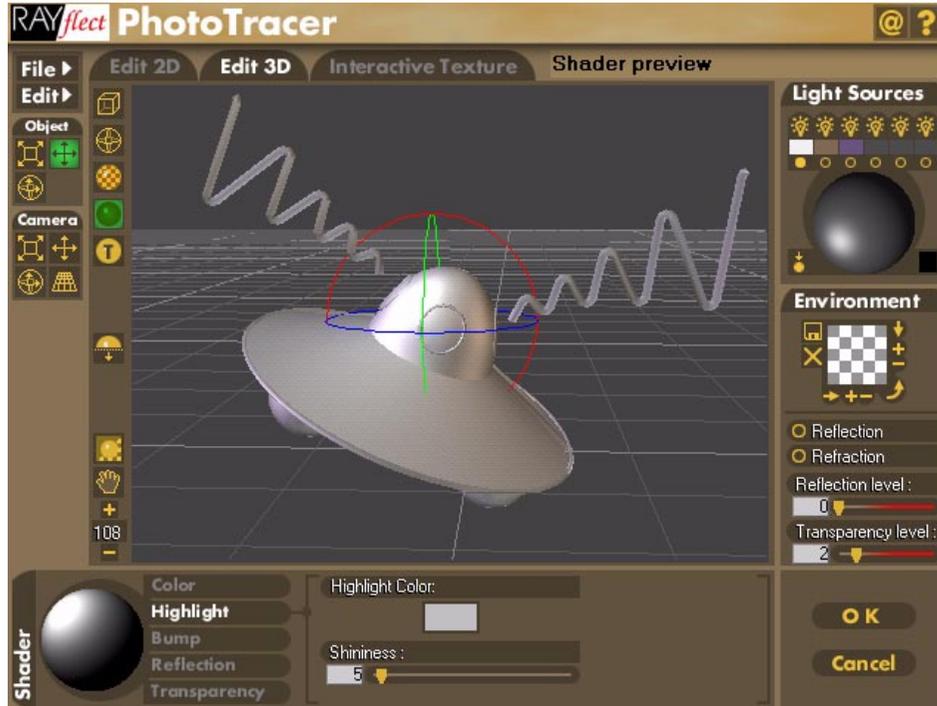
You now have a beautiful Cartoon- like image which would take hours to draw by hand!





*Cartoon Rendering*





## INTERFACE TOUR

This chapter gives you a tour of the RAYflect PhotoTracer User Interface. The RAYflect PhotoTracer window is subdivided into 5 parts:

- File and Edit menu
- Scene Working Window and Modes
- Shader Editor
- Light and Environment settings
- Rendering section



## Generalities

Rendering is done when you hit the OK button. At this stage the current scene is stored, ready to be reopened when you render it again (with Ctrl/Command-F in Adobe Photoshop). The next time you launch RAYflect PhotoTracer, it will load the previous scene.

Clicking Cancel will discard the current scene.

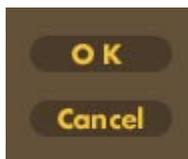
---

To quit RAYflect PhotoTracer:

1 Click on the **OK Button** to store and render the current scene.

or

2 Click on the **Cancel Button** to discard the current scene.



*OK and Cancel buttons*

At any time you can get extensive help through the use of tool tips on a Windows computer, or Balloon Help on a Macintosh.

---

To activate extensive help:

1 Click on the **Help Button** located in the upper right corner of the RAYflect PhotoTracer window



*Help Button*

If you encounter problems while using RAYflect PhotoTracer:

Click on the **At Sign Icon** (@) to direct your favorite World Wide Web browser to our WWW site support section.



*At Sign Icon*

---

## File and Edit menu

These two menus let you control and perform basic operations on your 3D scene.

### File Menu

The File Menu will let you manage the scene, for instance, load a new scene or save the current one.

---

To activate the File Menu:

1 Click with the left mouse button on the File> Item

2 Choose any of the items shown



*File and edit menu*

### Edit Menu

The Edit menu will let you interact with the objects in your scene, for instance duplicate objects.

---

To activate the Edit Menu:

1 Click with the left mouse button on the Edit> Item

2 Choose any of the items shown





*File and edit menu*

## Scene Working Window and Modes

This part of the interface is used to arrange your objects within your scene.

It lets you see your objects through the Working Window, either in 2D or in 3D mode.

It also lets you manipulate the objects.



*Edit 2D and Edit 3D Modes*

## Shader Editor

The **shader editor** contains a Preview and different channels. You use it to add materials to your objects.



*Shader Editor*

## Light Editor

This part of the interface deals with light sources, and lighting schemes.



*Light Sources Palette*

## Rendering Section

With these settings you can adjust several rendering options for instance the level of reflection or refraction.

It also allows you to specify an Environment for your scene.



*Rendering and Environment Palette*



## LOADING, SAVING OBJECTS

As seen previously, a typical workflow under RAYflect PhotoTracer will begin by adding several objects which will make up your scene.

---

To create a new scene:

- 1 Click with the left mouse button on the **File** button
- 2 Choose **Reset**
- 3 The current scene will be cleared and a new one will be created



*File Menu*

RAYflect PhotoTracer lets you open two different 3D formats:

- RAYflect PhotoTracer files whose extensions are .PTC. This is the native RAYflect PhotoTracer format
- 3D Studio(tm) files whose extensions are .3DS

---

To add objects to a newly created scene:

- 1 Click with the left mouse button on the **Edit** button.
- 2 Choose **Open**.
- 3 Select from the drop-down list the file format you want to open.
- 4 Browse your hard-disks, and select a file (either a .PTC file or a .3DS file).
- 5 Select **Open**.
- 6 The scene is displayed in the Working Window.

When you open a RAYflect PhotoTracer file the current edited scene is lost.

---

To Insert objects into a previously created scene:

- 1 Click with the left mouse button on the **Edit** button.
- 2 Choose **Insert**.
- 3 Select from the drop-down list the file format you want to open.
- 4 Browse your hard-disks, and select a file (either a .PTC file or a .3DS file).
- 5 Select **Open**.

The new objects are added to the existing scene.

---

To Save your scene:

- 1 Click with the left mouse button on the **Edit** button.
- 2 Choose **Save**.

If your scene is being saved for the first time, the Save item will act in the same way as **Save As**.

If your scene has already been saved, the old file will be overwritten.

---

To save your scene in a new file:

- 1 Click with the left mouse button on the **Edit** button.
- 2 Choose **Save As**.
- 3 When the standard save dialog box shows up, enter the file name.
- 4 Click **Save**.

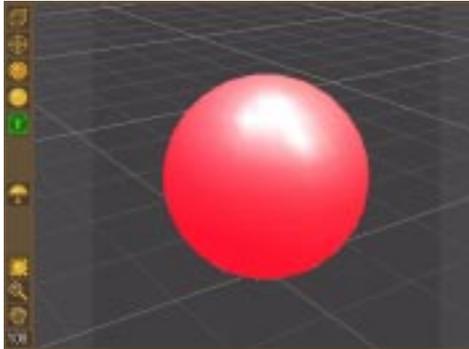


## OBJECTS MANIPULATION AND VIEWING

The second step in the typical workflow will be to manipulate your objects to make up your scene and then select the best viewpoint.



An interactive representation of the scene is displayed in the Working Window.



*Working Window*

This Working Window contains the 3D Workspace. This 3D Workspace is where all objects are displayed, assembled, and manipulated. By default RAYflect PhotoTracer opens new scenes with only a grid plane, called Working Plane.

This Working Plane is a visual reference of the 3D workspace and a tool to help you manipulate objects.

There are several tools associated with this window:

- Preview Modes
- Picture actions
- Render test button
- Ghost Menu (tm)

### Preview Modes

RAYflect PhotoTracer lets you manipulate and see your scene with different preview settings.

The view has six different display modes:

- Bounding Box mode (Objects are drawn as boxes).



### Bounding Box Mode Button

- Wireframe mode (Only edges of objects are drawn).



### Wireframe Mode Button

- Flat shaded mode (Faces of the objects are drawn flat, with highlights)



### Flat Mode Button

- Gouraud shaded mode (Faces are drawn smoothed, with highlights)



### Gouraud Mode Button

- Textured mode (Transparency and textures are displayed)



### Textured Mode Button

Textured mode and Gouraud-shaded mode show details of the shape and color



of your objects, but take longer to calculate and draw. To increase RAYflect PhotoTracer efficiency, you might want to work in Wireframe at the outset of a project, then switch to the Textured mode as specific details (like texture) become important.

## Image Settings

RAYflect PhotoTracer allows you to work inside a Photoshop layer. In order to place your objects relative to a background image, RAYflect PhotoTracer can display the current layer as a background.

To see the background image in the Working Window:

- 1 Select the **Display Background Image** toggle button.
- 2 Your background image should be visible, but dimmed in a way that improves the readability of your scene.



*Display Background Image Button*

If your image is shown as a light checked image, this means that you are working on a transparent layer.

You can magnify (i.e. zoom in or out) the image, exactly as you can in Adobe Photoshop, in order to adjust the position of your objects with more precision.

To zoom in the background picture:

- 1 Click on the **Zoom In Picture** button.
- 2 A new magnification factor is displayed.



*Zoom In and Out Buttons*

To zoom out the background picture:

- 1 Click on the **Zoom Out Picture** button.
- 2 A new magnification factor is displayed.

Once the background image has been magnified, you can scroll the view to see parts of this image which are hidden.

To scroll the view of the background picture:

- 1 Select the **Scroll Picture** tool.
- 2 While clicking the left mouse button, drag the mouse pointer into the Working Window.
- 3 The background image will be scrolled accordingly.



*Scroll Picture Tool*

## Render Test

While creating a scene it is always necessary to render images again and again, to fine-tune objects' positions or textures. In RAYflect PhotoTracer you do not have to hit the OK button to render then switch back to PhotoTracer to modify something...You can render your scene directly within the RAYflect Pho-



to Tracer's Working Window, with the best final quality.

To render the image with the final quality:

- 1 Click on the Render Image Button
- 2 While the image is rendering, you can abort the rendering by hitting the ESC key (or the Command-. (dot) key combination on Mac).



*Render Image Button*

### Ghost Menu (tm)

The Ghost Menu(tm) is the best way to manipulate RAYflect PhotoTracer's objects. The Ghost Menu(tm) is a new generation of user interface; every commonly-used command is accessible directly from the Working Window, in only one mouse click.

We advise you to get used to launching commands from the Ghost Menu(tm). Doing this will dramatically reduce your design time.

To activate the Ghost Menu(tm) on a Windows computer, just hold the right mouse button down and then move the mouse cursor over the symbol for the action you want to launch.

To activate it on a Macintosh computer, press the Control-Key and the mouse button, then choose the action you want to launch.



*Ghost Menu*

Once the action is activated and finished, RAYflect PhotoTracer returns to the previous toolbar action selected.

The key benefits of the Ghost Menu(tm) are:

- You don't have to move the mouse to the toolbar (it just pops up under your mouse).

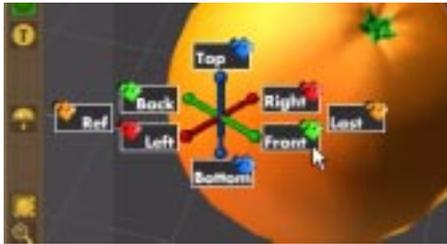
- You don't have to remember keyboard shortcuts.
- You have access to all the commonly-used features of RAYflect PhotoTracer.
- The Ghost Menu(tm) remembers your last action. This means that the next time you activate it, the action you used last time is right under your mouse pointer. To activate it again, just release the mouse button.

The Ghost Menu(tm) has been organized in a way that will help you quickly find the commands you want:

- **Left part:** commands dealing with objects manipulation.
- **Right part:** commands dealing with cameras (the command's icon is a small camera).
- The **color of the icon** displays a family of commands. For instance, purple icon commands deal with rotation: rotating an object (Rotate command) is equivalent to rotating a camera (Dolly command).



By holding the Alt/Option key while activating the Ghost Menu(tm), you have access to the **Alternate Ghost Menu(tm)**. The Alternate Ghost Menu lets you change the point of view of your viewing camera.



*Alternate Ghost Menu*

## Objects Manipulation

In this section you will learn how to move, select and change your objects.

The objects tools let you perform every basic operation (alignment, positioning, orientation) by dragging in the Working

Window. These tools are located in the Object Toolbar.



*Object Tools*

While manipulating objects you can always undo your actions (see 8.1 Undo/Redo)

### Object Selection

To perform commands or actions on objects, you need to have an active selection.

A selected object is surrounded by its Bounding Box.

You can select several objects.

**To select an object:**

- 1 Choose the **Selection/Move Tool** in the Objects Toolbar, or the **Move** item in the Ghost Menu(tm)

- 2 Click on an object in the Working Window. It is now surrounded by its bounding box.



*Selection/Move Tool*



*Ghost Menu Move Tool*

**To add an object to the selection:**

- 1 Choose the **Selection/Move Tool** in the Objects Toolbar, or the **Move** item in the Ghost Menu(tm)
- 2 **Shift-click** on a non-selected object in the Working Window to add it to the selection.

**To remove an object from a selection:**

- 1 Choose the **Selection/Move Tool** in the Objects Toolbar, or the **Move** item in the Ghost Menu(tm)

- 2 **Shift-click** on a previously selected object in the Working Window to remove it from the selection.

When arranging complex scenes, it often happens that you need to select an object which is behind another, larger object. RAYflect PhotoTracer lets you use a special feature called Selection Cycling.

---

To use Selection Cycling to cycle through overlapping objects:

- 1 Remove current selection by clicking in a region of the Working Window where there are no objects.
- 2 Click on the closest object that overlaps the object you want to be selected, and hold the mouse button down without moving it.
- 3 Wait a fraction of a second, the object behind the first one will be selected for a fraction of a second. If you wait longer, the next object behind the one selected will be selected.

- 4 Move the mouse, or release the mouse button when the object you want to reach is selected, to keep it selected.

If all objects have been selected in turn, and if the mouse has not been moved, the first object will be selected again, then the second, and so forth.

---

*Note: RAYflect PhotoTracer does not rely on the Bounding Box of the object to perform selections, but rather use the real shapes of the objects to be more accurate.*

---

## Move Object

---

To Move a selection parallel to the Working Plane:

- 1 Select one or more objects.
- 2 Select the **Selection/Move** tool either from the toolbar or from the Ghost Menu(tm).
- 3 Click on an object in the Working Window and drag the mouse, the object will follow the mouse pointer.



*Selection/Move Tool*



*Ghost Menu Move Tool*

---

To Move a selection perpendicular to the Working Plane:

- 1 Repeat the steps described above.
- 2 When moving, press the **Alt/Option** key to move perpendicular to the Working Plane.

## Rotate Object

---

To Rotate a selection with the virtual trackball:

- 1 Make sure the object is selected.
- 2 Select the **Rotate Objects tool** or **Rotate** from the Ghost Menu(tm)



- 3 Click and drag to rotate to a new orientation



*Rotate Tool*



*Ghost Menu Rotate Tool*

To Rotate a selection around only one axis:

- 1 Make sure the object is selected.
- 2 Select the **X,Y** or **Z button** near Rotate in the Ghost Menu(tm).
- 3 Drag the mouse horizontally.



*Ghost Menu Rotate Tool*

If the Shift Key is pressed during a rotation, the rotation is constrained to an angle increment of 45 degrees.

## Resize Object

To Scale a selection:

- 1 Make sure the object is selected.
- 2 Select the **Scale Tool** in the toolbar or the **Scale** item in the Ghost Menu(tm)
- 3 Drag the mouse horizontally to change the object size



*Scale Tool*



*Ghost Menu Scale Tools*

To Scale a selection on only one local axis:

- 1 Make sure the object is selected.
- 2 Select the X,Y or Z button near Scale in the Ghost Menu(tm).
- 3 Drag the mouse horizontally.



*Ghost Menu Scale Tools*



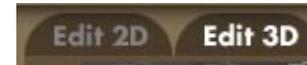
## Scene Modes

RAYflect PhotoTracer implements two different modes of interaction with objects:

- Edit 2D mode.
- Edit 3D mode.

How to switch from one mode to another one:

- 1 Simply click on the Edit 2D or Edit 3D Tab located in the upper part of the Working Window



*Edit 3D Tab*

## Edit 2D Mode

The **Edit 2D mode** is a special mode in which objects are seen exactly as if they were in 2D. This means that the interactions you can have will take place in 2D only.

The objects are seen from a top view.

Move, Rotate, and Resize act, in this mode, in 2D.

## Edit 3D Mode

The **Edit 3D mode** is a mode where the Working Window shows the 3D Workspace from a conical camera.

The Edit 3D mode lets you manipulate the camera and the objects in the 3D world.

In Edit 3D mode, a new toolbar appears, labeled Camera, containing four tools:

- Zoom
- Pan
- Dolly
- Set camera Focal



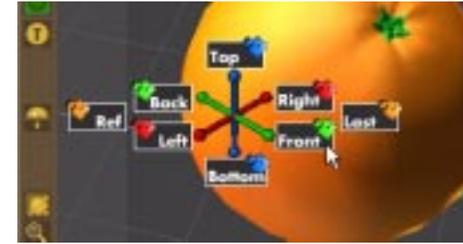
### Camera Tools

You can now use the Alternate Ghost Menu.

### Alternate Ghost Menu

The **Alternate Ghost Menu** lets you change the point of view of your camera.

- **Ref**: Reference camera (perspective view)
- **Left/Right**: Left and Right views
- **Top/Bottom**: Top and Bottom views
- **Last**: returns to the last perspective view.



### Alternate Ghost Menu

#### Dolly Camera Tool

The Dolly tool is used to rotate the camera around the viewpoint. It acts exactly as if you were using a virtual trackball.

#### To use the Dolly:

- 1 Select the **Dolly tool** from the Camera Toolbar OR select **Dolly** from the Ghost Menu(tm).
- 2 At this stage, the mouse cursor will reflect the tool used.
- 3 Click in the Working Window, and drag the mouse pointer to rotate the view.



### Camera Dolly Tool



### Ghost Menu Dolly Tool

You can use the Alt/Option key to tilt the camera instead of rotating it.

You can also use the **Roll** item in the Ghost Menu(tm) to adjust the camera roll.



### Ghost Menu Roll Tool

This command is not available in the Edit 2D Mode and the Preset views chosen from the Alternate Ghost Menu.

The keyboard can also be used to manually rotate the camera around its view-point:

- Keypad 4:** left
- Keypad 6:** right
- Keypad 8:** up
- Keypad 2:** down

### Pan Camera Tool

The Pan command is used to move the camera in the 3D Workspace.

---

#### To use the Pan:

- 1 Select the **Pan tool** from the Camera Toolbar OR select **Pan** from the Ghost Menu(tm).
- 2 At this stage, the mouse cursor will reflect the tool used.
- 3 Drag the mouse in the Working Window to pan the camera.



### Camera Pan Tool



### Ghost Menu Pan Tool

You can use the Alt/Option key to track the camera in/out.

This command is not available in the Edit 2D Mode and the Preset views chosen from the Alternate Ghost Menu.

### Zoom Camera Tool

The Zoom command allows you to zoom in or out.

---

#### To use the Zoom:

- 1 Select the **Zoom tool** from the Camera Toolbar OR select **Zoom** from the Ghost Menu(tm).
- 2 At this stage the mouse cursor will reflect the tool used.
- 3 Drag the mouse horizontally to zoom in or out.



### Camera Zoom Tool



### Ghost Menu Zoom Tool

---

**Caution:** The zoom command located in the Camera Toolbar does not act like the Magnify command of the Working Window. The zoom command actually changes the camera, thus modifies only the view of the objects, unlike the Magnify command which modifies both the objects' view and the size of the background image.

---

### Focal Camera Tool

The focal command allows you to change the perspective used by the camera.

---

To use the Set Focal:

- 1 Select the **Set Focal** tool from the Camera Toolbar.
- 2 At this stage, the mouse cursor will reflect the tool used.

- 3 Drag the mouse horizontally to change the focal.



### Camera Focal Tool

This command is not available in the Edit 2D Mode and the Preset views.



## ARRANGING OBJECTS

Objects are arranged in a scene through a hierarchy. Although the hierarchy is not graphically displayed, you can still modify it in a user-friendly way.

This hierarchy contains either objects or groups of objects. You can, at any time, group objects (and even previously grouped objects), and ungroup previously grouped objects.

'Stand-alone' objects are displayed with white Bounding Boxes while they are selected, and groups are displayed with blue Bounding Boxes.



### Edit Menu

Arranging objects is done with the Edit Menu which contains the following items:

- Undo
- Redo
- Cut
- Copy
- Paste
- Duplicate
- Select All

- Invert
- Group
- Ungroup



To Undo the last object manipulation:

- 1 Go to **Edit Menu**.
  - 2 Select **Undo**.
- or
- 1 Hit Control/Command Z.

To Redo the last undone object manipulation

- 1 Go to **Edit Menu**.
  - 2 Select **Undo**.
- or
- 1 Hit Control/Command Y.

You can undo/redo object manipulation, such as translation, rotation, or object resizing. You have access to 32 levels of Undo.



## Clipboard Management

RAYflect PhotoTracer lets you use the clipboard in the same way as any other software does.

To cut a selection in the working window:

- 1 Select any objects.
- 2 Choose **Edit menu** -> **Cut** (Ctrl/Command-X).
- 3 A copy of the selection is placed in the Clipboard, the original is deleted.

To Copy a selection in the working window:

- 1 Select any objects.
- 2 Choose **Edit menu** -> **Cut** (Ctrl/Command-C).
- 3 A copy of the selection is placed in the Clipboard.

To Paste a selection in the working window:

- 1 Choose **Edit menu** -> **Paste** (Ctrl/Command-V).

- 2 The selection appears in the Working Window.

## Delete a selection

To delete a selection:

- 1 Select the objects you want to delete.
- 2 Press the **Delete Key** or the **Backspace Key**.

## Duplication

To duplicate a selection:

- 1 Select any objects
- 2 Choose **Edit Menu** -> **Duplicate** (Ctrl/Command-D)
- 3 The objects are duplicated and are in the same location as the originals.

## Managing Selections

To Select all the objects of the scene:

- 1 Choose **Edit Menu** -> **Select All** (Ctrl/Command-A).
- 2 The whole scene is selected, the previous active selection is then lost.

Sometimes it may be useful to inverse the current active selection, for instance when you want to select multiple objects except for a few ones; simply select the few ones, and inverting the selection will do the trick.

To Invert the selection:

- 1 Choose **Edit Menu** -> **Invert**.
- 2 The objects previously selected are unselected, the previously unselected are now selected.



---

## Group/Ungroup

When manipulating multiple objects, it is easier to manipulate only one entity. So it is possible to group several objects and manipulate them exactly as if they were only one object.

Grouped objects have blue bounding boxes while selected, unlike 'stand-alone' objects whose bounding boxes are white.

---

To group a selection:

- 1 Choose **Edit Menu** -> **Group** (Ctrl/Command-G).
- 2 The objects forming the selection are grouped together.

---

To ungroup a group:

- 1 Choose **Edit Menu** -> **Ungroup** (Ctrl/Command-U).
- 2 The group is split into different objects.



## SHADING OBJECTS

Shading objects is the third step in the creation workflow under RAYflect PhotoTracer.

This operation lets you texture or color your scene, by adding materials to your objects.



Shader Palette

To achieve this, use the Shader Editor, which is subdivided into two parts:

- Shader Preview.
- Channels making up the shaders.

---

### Assigning Shaders to objects

There are two ways to assign shaders to objects:

- Drag and drop to a 'stand-alone' object.
- Select an object and modify its shader's channels.

---

#### To Apply a shader to an object:

- 1 Click on the shader preview.
- 2 While holding the left mouse button down, drag the mouse pointer to an object.

If the object is a group, the mouse cursor is displayed as an interdiction sign.

Grouped objects have blue bounding boxes while selected, unlike 'stand-alone' objects whose bounding boxes are white.

If the object is a 'stand-alone' object the mouse cursor is an arrow. Simply drop the shader on it, the object will now be displayed (and rendered) with this newly created shader.

---

#### To Modify the shader of an object:

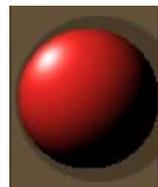
- 1 Select only one object (make sure it is not a group).
- 2 Edit the shader channels.
- 3 The object will change accordingly.

---

### The Shader Preview

This preview always shows the shader of the currently selected object or the shader you are editing.

The Shader Preview is automatically refreshed when any of the parameters of a shader are modified.



Shader Preview



## Shader Channels

Each shader is made up of its channels defining the properties of the object material.



### Shader Channels

#### Color Channel

No shader channel has a more obvious effect on the appearance of an object than the color channel.

As the color channel you can use either a plain color or an image which will be wrapped round the object: this image is called a Texture Map.



#### Color Channel

To specify a color as Color Channel:

- 1 Select the **Use color** radio button.
- 2 Click on the **color swatch**.
- 3 A pop-up color window appears containing a color spectrum.
- 4 Release the mouse button when the mouse cursor is on the color you want. The color swatch should display the selected color.
- 5 Both the objects sharing this shader and the Shader Preview should change accordingly.

To numerically specify a color as Color Channel:

- 1 Select the Use color radio button.

- 2 Click on the color swatch while holding the Ctrl-Key down.
- 3 The standard color picker should appear.
- 4 Select or enter the color you want and select OK.
- 5 Both the objects sharing this shader and the Shader Preview should change accordingly.

Texture maps using color images are extremely useful in the Color Channel.

If no texture is loaded, the texture swatch should display a light checker pattern; otherwise you can see a preview of the loaded image.

RAYflect PhotoTracer lets you load either a JPEG or a BMP file

To use an image as Color Channel:

- 1 Select the **Use Texture** radio button.
- 2 If no texture was loaded a standard file selector is displayed, letting you choose the image file you want.



- Both the objects sharing this shader and the Shader Preview should change accordingly.

---

To change the texture used as Color Channel

- Click on the little **disk icon**.  
or
- Activate the local menu (right mouse button click on Windows/ Command-Click on Macintosh) and choose Load.
- A standard file selector should appear, letting you choose the image file you want to load.
- Once the file is loaded the texture swatch should display a preview of your image.
- Both the objects sharing this shader and the Shader Preview should change accordingly.



*Disk Icon*

---

To clear a previously loaded texture:

- Click on the **cross icon**.  
or
- Activate the local menu (right mouse button click on Windows/ Command-Click on Macintosh) and choose Clear.
- Both the objects sharing this shader and the Shader Preview should change accordingly.



*Cross Icon*

RAYflect PhotoTracer allows you to modify the position of the texture maps on the objects.

You can rotate, flip and even tile the original image.

---

To perform a 90 degree rotation of the image:

- Click on the **rotate icon** in the bottom right corner of the texture swatch.

- The texture swatch should show an image rotated.
- Both the objects sharing this shader and the Shader Preview should change accordingly.



*Rotate Icon*

---

To perform a horizontal flip of the image:

- Click on the **arrow icon** in the bottom left corner of the texture swatch.
- The texture swatch should show a flipped image.
- Both the objects sharing this shader and the Shader Preview should change accordingly.



*Vertical Flip Icon*

---

To perform a vertical flip of the image:



- 1 Click on the **arrow icon** in the upper left corner of the texture swatch.
- 2 The texture swatch should show a flipped image.
- 3 Both the objects sharing this shader and the Shader Preview should change accordingly.



*Horizontal Flip Icon*

To increase the tiling of the texture:

- 1 Click on the **vertical + icon** to increase the vertical tiling.
- or
- 1 Click on the horizontal + icon to increase the horizontal tiling.
  - 2 Both the objects sharing this shader and the Shader Preview should change accordingly.



*Increase Tiling Icon*

To decrease the tiling of the texture:

- 1 Click on the **vertical - icon** to decrease the vertical tiling.
- or
- 1 Click on the horizontal - icon to decrease the horizontal tiling.
  - 2 Both the objects sharing this shader and the Shader Preview should change accordingly.



*Decrease Tiling Icon*

### Highlight Channel

In the real world objects show highlights when they are illuminated. These bright spots are reflections of light sources onto the material.

Plastic surfaces show dimmed and large highlights, unlike metallic objects whose highlights are small and bright; other materials like stone or concrete do not produce highlights.

With RAYflect PhotoTracer you can simulate almost any highlights by setting the highlight color and the highlight size, called shininess.

A bright Highlight color will produce a bright highlight. The Shininess slider controls the size of the highlight. A high value will produce small highlights.

Real materials whose highlights are very bright have a high shininess value, unlike materials whose highlights are soft which have a low shininess value.



*Highlight Channel*

To change highlight color:

- 1 Click on the **highlight color** swatch.
- 2 A pop-up color window appears containing a color spectrum.



- 3 Release the mouse button when the mouse cursor is on the color you want. The color swatch should display the selected color.
- 4 Both the objects sharing this shader and the Shader Preview should change accordingly.

---

To numerically specify highlight color

- 1 Click on the **color swatch** while holding the Ctrl-Key down.
- 2 The standard color picker should appear.
- 3 Select or enter the color you want and hit the OK button.
- 4 Both the objects sharing this shader and the Shader Preview should change accordingly.

---

To change the shininess

- 1 Drag the thumb of the shininess slider.
- 2 Both the objects sharing this shader and the Shader Preview should change accordingly.

### Bump Channel

Rough surfaces are extremely difficult to model and lead to complex objects. Imagine the irregularities of an orange skin: it would be impossible to geometrically model each irregularity by hand.

RAYflect PhotoTracer simulates the variations on the surface of an object in a really efficient way with the Bump Channel.

By placing a picture in the Bump Channel you can disturb a smooth surface to add irregularities.

---

*Note: Bump Channel does not modify the surface of the geometric objects but rather changes the angle of incidence of the light at certain points of the surface thus providing a 'bumpy' effect. As this is a trick of RAYflect PhotoTracer the edges of the objects remain smooth.*

---

To simulate bumps the texture used in the Bump Channel (also called bump map) must specify a variation between

adjacent pixels. This means that if your image is filled with a plain color, it will not produce any bumping. As color information in the image is not used by RAYflect PhotoTracer (what is important is the relative changes between adjacent pixels) it is often better to use grayscale pictures as bump maps.



### Bump Channel

If no bump map is loaded, the bump map swatch should display a light checker pattern; otherwise you can see a preview of your image.

RAYflect PhotoTracer lets you load either a JPEG or BMP file.

---

To change the texture used as Bump Channel

- 1 Click on the little **disk icon**.  
or



- 1 Activate the local menu (right mouse button click on Windows/ Command-Click on Macintosh) and choose Load.
- 2 A standard file selector should appear, letting you choose the image file you want to load.
- 3 Once the file is loaded the texture swatch should display a preview of your image.
- 4 Both the objects sharing this shader and the Shader Preview should change accordingly.



*Disk Icon*

---

To clear a previously loaded texture:

- 1 Click on the **cross icon**.
- or
- 1 Activate the local menu (right mouse button click on Windows/ Command-Click on Macintosh) and choose Clear.

- 2 Both the objects sharing this shader and the Shader Preview should change accordingly.



*Cross Icon*

RAYflect PhotoTracer allows you to modify the position of the texture maps on the objects.

You can rotate, flip and even tile the original image.

---

To perform a 90 degree rotation of the image:

- 1 Click on the **rotate icon** in the bottom right corner of the texture swatch.
- 2 The texture swatch should show an image rotated.
- 3 Both the objects sharing this shader and the Shader Preview should change accordingly.



*Rotate Icon*

---

To perform a horizontal flip of the image:

- 1 Click on the **arrow icon** in the bottom left corner of the texture swatch.
- 2 The texture swatch should show a flipped image.
- 3 Both the objects sharing this shader and the Shader Preview should change accordingly.



*Vertical Flip Icon*

---

To perform a vertical flip of the image:

- 1 Click on the **arrow icon** in the upper left corner of the texture swatch.
- 2 The texture swatch should show a flipped image.
- 3 Both the objects sharing this shader and the Shader Preview should change accordingly.



### Horizontal Flip Icon

To increase the tiling of the texture:

- 1 Click on the **vertical + icon** to increase the vertical tiling.
- or
- 1 Click on the horizontal + icon to increase the horizontal tiling.
- 2 Both the objects sharing this shader and the Shader Preview should change accordingly.



### Increase Tiling Icon

To decrease the tiling of the texture:

- 1 Click on the **vertical - icon** to decrease the vertical tiling.
- or
- 1 Click on the horizontal - icon to decrease the horizontal tiling.
- 2 Both the objects sharing this shader and the Shader Preview should change accordingly.



### Decrease Tiling Icon

In order to achieve subtle effects when modifying a surface, RAYflect PhotoTracer provides you with a slider to change the intensity of the Bump effect.

This slider, whose range is -3 to +3, lets you increase the bump effect (high values), soften the bump effect (low values), and even inverse the bump effect (negative values).

To change the bump intensity:

- 1 Drag the thumb of the bump intensity slider.
- 2 Both the objects sharing this shader and the Shader Preview should change accordingly.



*Bump Intensity Slider*

### Reflection Channel

Many real materials are reflective, for instance glass or metallic materials.

RAYflect PhotoTracer allows you to set the color of the reflection, letting you create both subtler and more fantastic effects.

Usually a highly reflective object appears more vivid when its reflection color is a variation of the object's color. RAYflect PhotoTracer lets you specify a completely different color in the reflection than in the color channel, leading to unusual effects.

Darker colors used in the reflection channel produce less reflection (black means no reflection), unlike brighter colors which produce more.



*Reflection Channel*



---

To change reflection color:

- 1 Click on the **color swatch**.
- 2 A pop-up color window appears containing a color spectrum.
- 3 Release the mouse button when the mouse cursor is on the color you want. The color swatch should display the selected color.
- 4 Both the objects sharing this shader and the Shader Preview should change accordingly.

---

To numerically specify reflection color

- 1 Click on the **color swatch** while holding the Ctrl-Key down.
- 2 The standard color picker should appear.
- 3 Select or enter the color you want and hit the OK button.
- 4 Both the objects sharing this shader and the Shader Preview should change accordingly.

## Transparency Channel

This channel controls the transparency of an object.

In RAYflect PhotoTracer, you can set the transparency color. The brighter the transparency color, the more you can see through the object.

To achieve realistic transparent objects it seems better to use a similar color both in the Color and Transparency channels.



*Transparency Channel*

---

To change transparency color:

- 1 Click on the **color swatch**.
- 2 A pop-up color window appears containing a color spectrum.
- 3 Release the mouse button when the mouse cursor is on the color you want. The color swatch should display the selected color.

- 4 Both the objects sharing this shader and the Shader Preview should change accordingly.

---

To numerically specify transparency color

- 1 Click on the **color swatch** while holding the Ctrl-Key down.
- 2 The standard color picker should appear.
- 3 Select or enter the color you want and hit the OK button.
- 4 Both the objects sharing this shader and the Shader Preview should change accordingly.

Usually when light rays pass through a semi-transparent object, their trajectories are deflected. This well-known behavior is called refraction. Glass, water and other materials refract light, leading to a distorted view of objects behind the refractive surface. The factor which controls the amount of distortion is known as the index of refraction.

RAYflect PhotoTracer lets you change the index of refraction of the shader



through the use of the refraction index slider.

To change the index of refraction:

- 1 Drag the thumb of the **refraction index slider**
- 2 Both the objects using this shader and the Shader Preview should change accordingly



Index of Refraction Slider

To help you find good values, here is a little summary for various kinds of materials:

- Air 1.0
- Water 1.3
- Alcohol 1.36
- Quartz 1.46
- Glass 1.5
- Diamond 2.46

## Interactive Texture Renderer

RAYflect has introduced a new and really powerful feature in RAYflect PhotoTracer, letting you texture your scene directly on the final rendered image.

The Interactive Texture Renderer is useful to set-up:

- Textures on objects
- Lighting schemes
- Environments

### How does it work?

The Interactive Texture Renderer renders the current scene with the final quality, storing some useful information needed to perform the shading.

The Interactive Texture Renderer is extremely simple to use.

To activate the Interactive Texture Renderer:

- 1 Simply click on the Tab labeled **'Interactive Texture'**
- 2 Click on the black image in the center of window

- 3 A rendered image of your scene with the final quality should appear



Interactive Texture Tab

### Assigning textures to objects

The first thing to do is to select the object you want to texture.

To select an object to texture:

- 1 Click on the object you want to texture in the image.

The Shader Editor will then show the current shader associated with the selected object.

Modifying any channel will modify the rendered image, automatically and in real-time.

It becomes really simple to change the color or the texture of an object, and even its bump map or its reflection color.



As the model used by RAYflect PhotoTracer is really general, reflection and refraction are also taken into account.

So RAYflect PhotoTracer is able to change the textures of reflected objects.

### Modifying lighting scheme

RAYflect PhotoTracer is able to take into account any modification you make to the lighting scheme (see next chapter) and refresh the preview of the final rendered image accordingly and in real-time.

### Modifying the Environment

RAYflect PhotoTracer is able to take into account any modification you make to the environment (see next chapter) and refresh the preview of the final rendered image accordingly and in real-time.

### Limitations

To perform all these tasks, RAYflect PhotoTracer needs to store several pieces

of information, leading to high memory consumption.

Moreover, RAYflect PhotoTracer, in order to achieve fast image refresh, uses slightly different reflection and refraction settings than its normal renderer. This means that while you are editing the textures in the Interactive Texture Renderer, the reflection and refraction levels (see next chapter) are fixed to some good (but not too high) values.



## LIGHTING

The appearance of objects in RAYflect PhotoTracer is determined by the lights.

A good lighting scheme (lights' positions and colors) can dramatically increase the readability and the atmosphere of a rendered scene.

The same scene rendered with two different lighting schemes will produce completely different results. For instance a lighting scheme whose lights are dark will produce a black image. Inversely a lighting scheme with bright lights will wash out subtle effects.

Lighting effects become visible in the Working Window when RAYflect PhotoTracer is configured on Flat shaded preview and above.

When you render your scene (by clicking on the Render Tool or by hitting the OK button), RAYflect PhotoTracer will use the current lighting scheme.

RAYflect PhotoTracer lets you adjust up to six infinite directional light sources, and one ambient light.

Infinite directional light sources are outside the RAYflect PhotoTracer 3D Workspace (thus their emitting points are not visible), and cast parallel light rays in the 3D Workspace.



*Light Sources Palette*



### Ambient Light

Ambient light is uniform through the 3D workspace. It has no origin and no predominant direction, since it radiates in

every direction. Just imagine that it is the equivalent of daylight in the real-world.



*Ambient Light*

To set Ambient Light color:

- 1 Click on the **color swatch**.
- 2 A pop-up color window appears containing a color spectrum.
- 3 Release the mouse button when the mouse cursor is on the color you want. The color swatch should display the selected color.

To numerically specify Ambient Light color

- 1 Click on the **color swatch** while holding the Ctrl-Key down.
- 2 The standard color picker should appear.
- 3 Select or enter the color you want and hit the OK button.



## Light set-up

RAYflect PhotoTracer lets you set up or modify each one of the six light sources.

For each light source, you can modify its color, its position in the 3D Work-space, and its state.

### Light source State

Each light source can be switched on or off (i.e. enabled or disabled). A switched off light source has no effect on the lighting of the scene.

To turn off a light source:

- 1 Make sure the light you want to switch off is actually enabled.
- 2 Click on the **Bulb Light Icon**.
- 3 The icon should change to a switched off bulb light.
- 4 The lighting of the scene viewed in the Working Window should be updated accordingly.



*Bulb Light Icon OFF*

To turn on a light source:

- 1 Make sure the light you want to switch on is actually disabled.
- 2 Click on the bulb light icon.
- 3 The icon should change to a switched on bulb light.
- 4 The lighting of the scene viewed in the Working Window should be updated accordingly.



*Bulb Light Icon OFF*

### Light Source Color

Each one of the six light sources possesses its own color.

Darker colored light sources will cast less light than brighter ones. This means that if your light color is black, this light

source will not contribute to the scene's lighting.

To Change the color of a light source:

- 1 Click on the **Light Color Swatch**.
- 2 A pop-up color window appears containing a color spectrum.
- 3 Release the mouse button when the mouse cursor is on the color you want.



*Light Color Swatch*

To numerically specify Ambient Light color

- 1 Click on the **color swatch** while holding the Ctrl-Key down.
- 2 The standard color picker should appear.
- 3 Select or enter the color you want and hit the OK button.



## Light Source Position

The Light Source Position can be modified through the use of a virtual light sphere.

To set the position of the light, imagine the light sphere as a glass ball surrounding your scene. The highlight shows where the light shines through the glass, towards the center of your scene.

As you can only see one hemisphere of the virtual light sphere at a time, there is a special control which is used to inverse the light position.

By default when this control shows an arrow from top to bottom, the light source is above the scene, and when the arrow is in the opposite direction, the light source is under the scene.

As there are six light sources and only one virtual light sphere, each light has a selector item graphically represented as a yellow dot. If the yellow dot is under the fourth light source for instance, this means that the light sphere will actually show the position of the fourth light.

---

To select the light source to be edited:

- 1 Click on the **light source selector** under the light source color swatch.
- 2 The light source selected has a yellow spot as light source selector.



*Light Source Selector*

---

To set the position of a light:

- 1 Drag the highlight on the surface of the **light sphere** to position the light source.
- 2 The lighting of the scene viewed in the Working Window should be updated accordingly.



*Light Sphere*

---

To change the side of the light:

- 1 Click on the icon showing an arrow.
- 2 The lighting of the scene viewed in the Working Window should be updated accordingly.



*Light Side Icon*



## RENDERING

When you have built a scene, set lights and chosen a viewpoint, you are ready for rendering.

The rendering operation is the process of calculating the final image.

RAYflect PhotoTracer uses a really fast but accurate rendering engine, based on a hybrid Scanline-Raytracer renderer.

The renderer used by RAYflect PhotoTracer performs a very good anti-aliasing. Your scene will never show jagged edges.

---

### Environment Map

The Environment is a great way to improve objects' reflections.

Imagine that the Environment map is projected on the inside of a big sphere surrounding your scene. Any reflective objects will reflect this map.

The environment is really useful when your scene contains highly reflective

objects (such as chrome, or metal objects). Rendering reflective objects without a good Environment map will give dull effects on objects (since there is nothing to reflect). Chrome and metal effects are best achieved with a good Environment map, for instance a landscape image.



*Environment Map*

RAYflect PhotoTracer lets you select an image as your Environment, and lets you rotate, flip and tile it.

If no Environment map is loaded, the Environment map swatch should display a light checker pattern; otherwise you can see a preview of your image.

If there is no Environment map loaded, a default environment is used: it is a bi-

gradient, simulating a sky and a fake ground.

RAYflect PhotoTracer lets you load either a JPEG or BMP file.

---

#### To change the Environment Map

1 Click on the little **disk icon**.

or

1 Activate the local menu (right mouse button click on Windows/ Command-Click on Macintosh) and choose Load.

2 A standard file selector should appear, letting you choose the image file you want to load.

3 Once the file is loaded the texture swatch should display a preview of your image.

4 Once the file is loaded, the Environment map swatch should display a preview of your picture.



*Disk Icon*



---

To clear a previously loaded Environment map:

1 Click on the **cross icon**.

or

1 Activate the local menu (right mouse button click on Windows/ Command-Click on Macintosh) and choose Clear.



### Cross Icon

RAYfect PhotoTracer allows you to modify the position of the texture maps on the objects.

You can rotate, flip and even tile the original image.

---

To perform a 90 degree rotation of the image:

1 Click on the **rotate icon** in the bottom right corner of the texture swatch.

2 The texture swatch should show an image rotated.



### Rotate Icon

---

To perform a horizontal flip of the image:

1 Click on the **arrow icon** in the bottom left corner of the texture swatch.

2 The texture swatch should show a flipped image.



### Vertical Flip Icon

---

To perform a vertical flip of the image:

1 Click on the **arrow icon** in the upper left corner of the texture swatch.

2 The texture swatch should show a flipped image.



### Horizontal Flip Icon

---

To increase the tiling of the image:

1 Click on the **vertical + icon** to increase the vertical tiling.

or

1 Click on the **horizontal + icon** to increase the horizontal tiling.



### Increase Tiling Icon

---

To decrease the tiling of the texture:

1 Click on the **vertical - icon** to decrease the vertical tiling.

or

1 Click on the **horizontal - icon** to decrease the horizontal tiling.



### Decrease Tiling Icon

---

*Note: the Environment effect can only be seen in rendering mode (this means either*



*in the Interactive Texture Renderer, or in the final rendered image).*

---

## Renderer Settings

RAYflect PhotoTracer allows you to customize the render pass.

You can decide whether to render reflections and refractions or not.

Rendering reflections will be slower (provided that there are some reflective objects in the scene) than rendering with no reflections, and rendering refractions will be slower (provided that there are some transparent objects with refraction in the scene).

The refraction toggle button lets you indicate to the renderer that it should be aware of the index of refraction of each object.

RAYflect PhotoTracer allows you to set up the number of reflections and trans-

parency calculations to be performed in the render pass.

---

**Warning:** *High reflection and transparency levels produce slower render than low values.*

---

When the Reflections are disabled, the reflection level slider is automatically reset to zero, and when Reflections are enabled, the slider is set to the last reflection level value. This means that if the Reflection toggle is unchecked, reflective objects will only reflect the Environment map.

Reflections and transparency are computed by spawning new rays reflected (or transmitted) by surfaces. Reflection Level (and transparency level) control the amount of newly spawned rays for one pixel of the rendered image. Thus the greater the level, the greater the time needed to compute new rays and colors.

---

To enable or disable the computation of Reflection:

- 1 Simply click on the Reflection toggle button.
- 2 The result will be visible in the final rendered image.

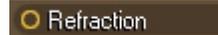


*Reflection Toggle*

---

To enable or disable the computation of Refractions:

- 1 Simply click on the Refraction toggle button.
- 2 The result will be visible in the final rendered image.



*Refraction Toggle*

---

To change the amount of reflections computed:



- 1 Simply drag the thumb of the Reflection Level slider to the desired amount.



Reflection Level

**Warning:** High reflection level produce slower render than low values.

Be aware that in the Interactive Texture Renderer, the amount is fixed at 1.

To change the amount of transparency computed:

- 1 Simply drag the thumb of the Transparency Level slider to the desired amount.



Refraction Level

**Warning:** High refraction level produce slower render than low values.

Be aware that in the Interactive Texture Renderer, the amount is fixed at 4.

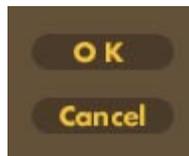


## Rendering a scene

Once your scene is built and your viewpoint is chosen to match the view you want, you can now render your final image.

To Generate the final image:

- 1 Simply click on the OK button.
- 2 Rendering should begin automatically.



OK and Cancel buttons

Rendering time depends on the complexity of your scene (number of objects, complexity of objects), the amount of reflective or transparent objects, and the size of the image.

RAYflect PhotoTracer renders the final image in the Adobe Photoshop document, so the final image size and resolution is fixed by the size and resolution of the Adobe Photoshop document or selection.

RAYflect PhotoTracer can only render to true RGB documents. If you need another kind of document, simply render to a RGB document and use Adobe Photoshop functions to convert the image to another type of color model.

RAYflect PhotoTracer lets you render in any layer. So it can be used to create a composition where the RAYflect PhotoTracer scene is in one layer and a background image is in another one. You can then move the scene rendered in Adobe Photoshop and place it precisely over the



background. Anti-aliasing will be perfect, since RAYflect PhotoTracer integrates a powerful anti-aliasing engine.



# OBJECT CATALOGUE

---

## Introduction

Thank you for purchasing RAYflect PhotoTracer.

RAYflect PhotoTracer includes more than 230 objects. Because they were created for RAYflect PhotoTracer, shading can be fully edited.

This objects has been created especially for RAYflect PhotoTracer by expert 3D Modelers at RAYflect: you can be assured of their quality.

The objects are organized by theme:

- Characters
- Fruits
- Fun
- Miscellaneous
- Packaging
- Primitives
- Web

This documentation provides a visual index of the rendered objects by category.

To use the objects simply run Photo-shop and launch RAYflect PhotoTracer, then open the file. See RAYflect PhotoTracer User Manual for more information.

---

## Installation

### Windows 95 / 98 / Windows NT

First download the archive on the RAYflect Web site.

---

To install RAYflect PhotoTracer:

- 1 Unzip the archive
- 2 Copy the "Objects" folder where you want on you hard disk.

After downloading a ".zip" file in Windows, use WinZip(R) by Nico Mak Computing:

<http://www.winzip.com/>  
or PKZIP(R) by PKWare, Inc.  
<http://www.pkware.com/>

Both products are available in tryout/evaluation versions.

---

*Warning: Some unzipers do not create by default the sub folders. Use the option: "Use Folder Names".*

---

When properly unzipped, you should have an "Objects" folder containing the following sub folders:

- Characters
- Fruits
- Fun
- Miscellaneous
- Packaging
- Primitives
- Web



## MacOS

First download the archive on the RAYflect Web site.

---

To install RAYflect PhotoTracer:

- 1 Unstuff the archive
- 2 Copy the “Objects” folder where you want on you hard disk.

---

## Getting Technical Support

For Technical Support or for more information about RAYflect's products, see our World Wide Web site on the internet:

<http://www.rayflect.com>



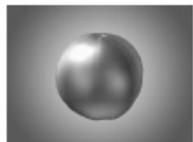
## /Objects/Fruits/



**apple.ptc**



**banana.ptc**



**orange.ptc**



**pear.ptc**



**pepper.ptc**



**walnut.ptc**



## /Objects/Fun/



**flying saucer.ptc**



**heart.ptc**



**helico.ptc**



**mouse.ptc**



**node.ptc**



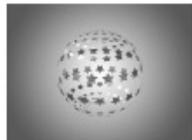
**strange.ptc**



**sun.ptc**



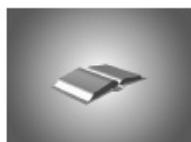
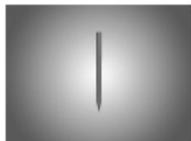
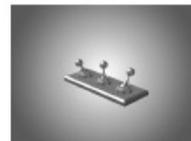
**teapot.ptc**



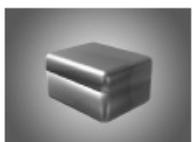
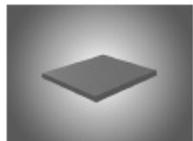
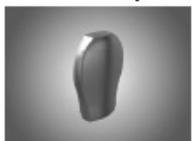
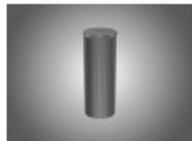
**ztarz.ptc**



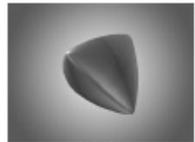
## /Objects/Miscellaneous/

**armchair.ptc****book.ptc****bowling pin.ptc****carafe.ptc****coffe.ptc****cornucopia.ptc****cornucopia2.ptc****crayon.ptc****cushion.ptc****eye.ptc****glass.ptc****jug.ptc****on-off.ptc****pen.ptc****pin.ptc****ring.ptc****teapot2.ptc****trombone.ptc**

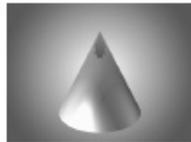
## /Objects/Packaging/

**aerosol.ptc****beaujolais.ptc****beer.ptc****bottle.ptc****box.ptc****box2.ptc****box3.ptc****can.ptc****CD Box open.ptc****CD Box.ptc****cigarette.ptc****cosmetic HR.ptc****cosmetic.ptc****detergent.ptc****disk.ptc****jerrican.ptc****mineral water.ptc****pill.ptc****pill2.ptc****shampoo.ptc****shampoo2.ptc****soda.ptc****tube.ptc****wine.ptc**

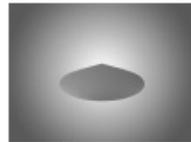
# /Objects/Primitives/



**boiled sweet.ptc**



**cone1.ptc**



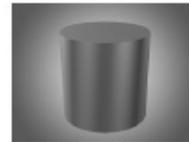
**cone2.ptc**



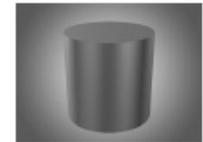
**cube.ptc**



**Cube2.ptc**



**cylinder1.ptc**



**cylinder2.ptc**



**ellipsoid.ptc**



**hemisphere.ptc**



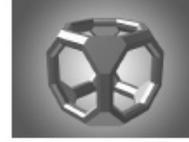
**hemisphere2.ptc**



**holycube.ptc**



**holycube2.ptc**



**holycube3.ptc**



**holycube4.ptc**



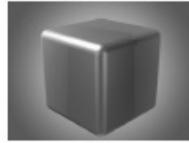
**prism.ptc**



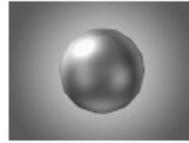
**pyramid.ptc**



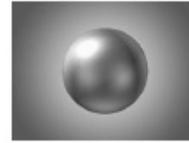
**pyramid2.ptc**



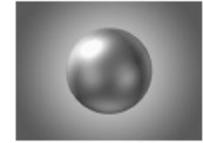
**rounded cube.ptc**



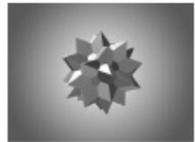
**sphere1.ptc**



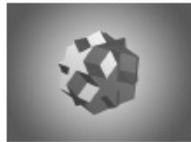
**sphere2.ptc**



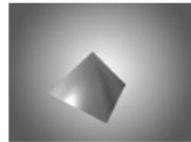
**sphere3.ptc**



**star1.ptc**



**star2.ptc**



**tetra.ptc**



**torus hr.ptc**



**torus.ptc**



**torus2 hr.ptc**



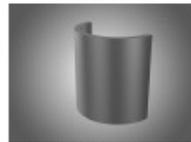
**torus2.ptc**



**torus3 hr.ptc**



**torus3.ptc**



**tube(half).ptc**



**tube(quarter).ptc**



**tube1.ptc**



**tube2.ptc**



**/Objects/Web/**



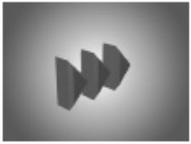
**arrow1.ptc**



**arrow2.ptc**



**arrow3.ptc**



**arrow4.ptc**



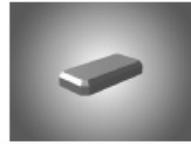
**arrow5.ptc**



**lightning.ptc**



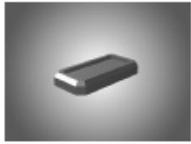
# /Objects/Web/Rectangle Buttons/



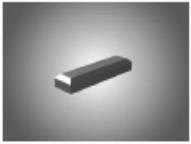
Angular Bevel1.ptc



Angular Bevel2.ptc



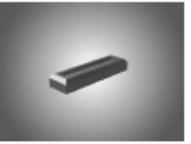
Angular Bevel3.ptc



Rectangle Bevel1.ptc



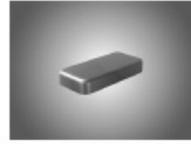
Rectangle Bevel2.ptc



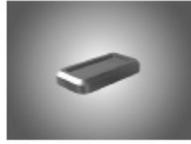
Rectangle Bevel3.ptc



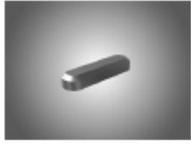
Round Bevel1.ptc



Round Bevel2.ptc



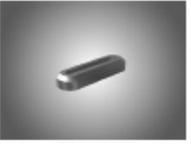
Round Bevel3.ptc



Thin Bevel1.ptc



Thin Bevel2.ptc



Thin Bevel3.ptc



## /Objects/Web/Round Buttons/



Oval Bevel1.ptc



Oval Bevel2.ptc



Oval Bevel3.ptc



Thin Oval Bevel1.ptc



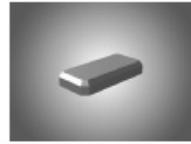
Thin Oval Bevel2.ptc



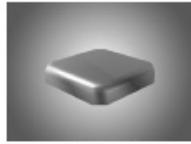
Thin Oval Bevel3.ptc



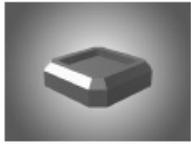
# /Objects/Web/Square Buttons/



Angular Bevel1.ptc



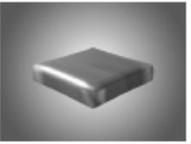
Angular Bevel2.ptc



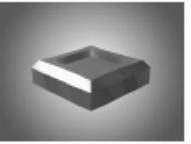
Angular Bevel3.ptc



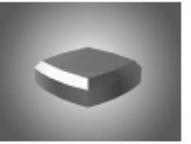
Concave Bevel1.ptc



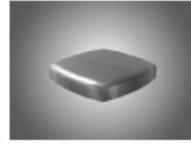
Concave Bevel2.ptc



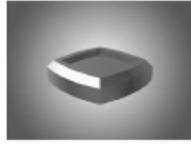
Concave Bevel3.ptc



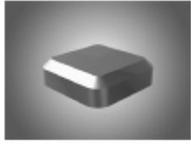
Convex Bevel1.ptc



Convex Bevel2.ptc



Convex Bevel3.ptc



Round Bevel1.ptc



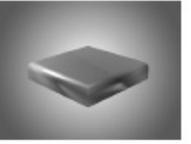
Round Bevel2.ptc



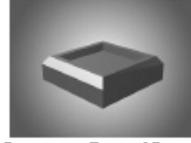
Round Bevel3.ptc



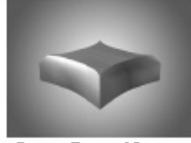
Square Bevel1.ptc



Square Bevel2.ptc



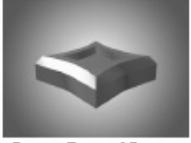
Square Bevel3.ptc



Star Bevel1.ptc



Star Bevel2.ptc



Star Bevel3.ptc



**torus3ang.ptc****torus4ang.ptc****torus5ang.ptc****torus6ang.ptc**

## /Objects/Web/Torus Buttons/



# END-USER LICENSE AGREEMENT

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---

#### 6. Governing law

This Agreement will be governed by the laws of France, held by the Tribunal de Grande Instance of the city of Paris, excluding the application of its conflicts of law rules. If any provision of this agreement is held to be unenforceable, the remainder of this agreement shall continue in full force and effect.

In case this agreement is written in various languages, only the French version will serve as proof.

---

#### 7. Termination

This license shall terminate automatically if you fail to comply with the limitations described in this Agreement. No notice shall be required from RAYflect S.A. to effectuate such termination. On termination you must destroy all copies of the Software.

---

## 8. Entire agreement

This Agreement constitutes the complete and exclusive agreement between RAYflect S.A. and you with respect to the subject matter hereof and supersedes all prior oral or written understandings, communications or agreements not specifically incorporated herein. This Agreement may not be modified except in a writing duly signed by an authorized representative of RAYflect S.A. and you.

## LICENCE D'UTILISATION DE LOGICIEL

---

### Important

Le fait de télé-charger le Logiciel, d'ouvrir son emballage, d'installer le Logiciel sur votre ordinateur, ou d'entrer un numéro d'enregistrement pour l'activer, vous lie à l'ensemble des termes

et conditions de ce contrat. Si vous n'acceptez pas l'ensemble de ces termes, vous devez détruire immédiatement tout exemplaire du Logiciel ainsi que la documentation qui l'accompagne.

---

### 1. Définition

Dans le présent contrat, le terme "Logiciel" définit le programme Logiciel lisible sur ordinateur. Le terme "Logiciel" inclut également toutes améliorations, versions modifiées, mises à jour, additions, et copies du Logiciel dont la société RAYflect S.A. vous accorde la licence.

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### 2. licence

La société RAYflect S.A. vous consent le droit d'usage non exclusif et non cessible du Logiciel, vous autorisant à utiliser un (1) exemplaire du Logiciel et de la documentation l'accompagnant, dans les conditions ci-après développées:

Vous êtes autorisé à:

- utiliser le Logiciel sur un (1) ordinateur situé dans vos locaux;
- utiliser le Logiciel sur un deuxième ordinateur tant que le premier et le second ordinateurs ne sont pas utilisés en même temps; et
- effectuer une copie du Logiciel à usage de sauvegarde, étant entendu que toute copie du Logiciel doit contenir l'ensemble des documents l'accompagnant, et que la copie de sauvegarde ne soit ni installée ni utilisée sur un ordinateur.

Vous n'êtes pas autorisé à:

- laisser un tiers utiliser le Logiciel, excepté en accords avec les conditions exposées ci-dessus;
- modifier, adapter, traduire, rétroconcevoir, décompiler, désassembler ou créer des produits dérivés basés sur le Logiciel;
- effectuer une copie du Logiciel (excepté à usage de sauvegarde);

- vendre, revendre, louer, effectuer une cession-bail, sous-licencier, attribuer, et de façon générale transférer vos droits sur le Logiciel; et
- enlever les étiquettes et les mentions de propriété du Logiciel.

### 3. Propriété intellectuelle

La structure, l'organisation et le code du Logiciel sont des secrets de fabrication ayant valeur pécuniaire appartenant à la société RAYflect S.A. qui vous sont licenciés de façon non exclusive.

Cette licence d'utilisation n'est pas une vente. L'ensemble des titres et des copyrights du Logiciel et des éléments qui l'accompagnent, ainsi que toute copie à usage de sauvegarde effectuée par vos soins, restent la propriété de la société RAYflect S.A., et peuvent faire l'objet de protections en conformité avec les lois et les traités sur le copyright et la propriété intellectuelle. A l'exception des droits mentionnés ci-dessus, cette licence ne

vous donne aucun droit sur les brevets, les secrets de fabrication, les marques, les copyrights ni aucun droits relatifs au Logiciel et à sa documentation.

### 4. Maintenance

La société RAYflect S.A. ne s'engage en aucun cas à vous fournir une maintenance ou des mises à jour du Logiciel. Toutefois, toute maintenance ou mise à jour éventuellement fournies par la société RAYflect S.A. devra respecter les conditions du présent contrat.

### 5. Exclusion de garantie

LE LOGICIEL AINSI QUE LA DOCUMENTATION SONT FOURNIS "TELS QUELS" SANS GARANTIE D'AUCUNE SORTE. LA SOCIÉTÉ RAYFLECT S.A. EXCLUT ÉGALEMENT TOUTE GARANTIE, EXPRESSE OU IMPLICITE, ET NOTAMMENT TOUTE GARANTIE IMPLICITE DE FONCTIONNE-

MENT ET D'ADAPTABILITÉ A QUELQUE APPLICATION PARTICULIERE QUE CE SOIT, SANS QUE CELA SOIT LIMITATIF. L'INTEGRALITÉ DES RISQUES INHÉRENTS A L'UTILISATION ET AUX PERFORMANCES DU LOGICIEL ET DE LA DOCUMENTATION VOUS INCOMBENT ENTIEREMENT. EN AUCUN CAS LA SOCIÉTÉ RAYFLECT OU SES DISTRIBUTEURS NE POURRONT ETRE TENUS POUR RESPONSABLES DE QUELQUES DOMMAGES QUE CE SOIT, CONSÉQUENTS OU SECONDAIRES, PARTICULIERS OU LOURDS, DIRECTS OU INDIRECTS (Y COMPRIS, ET SANS LIMITATIONS, LES DOMMAGES CAUSES PAR LA PERTE DE PROFIT, LE MANQUE A GAGNER, LA PERTE DE DONNÉES, OU TOUTE AUTRE PERTE FINANCIERE) RÉSULTANT DE CE CONTRAT ET DE L'UTILISATION OU DE L'INHABILITÉ A UTILISER LE LOGICIEL. CETTE LIMITATION S'APPLIQUERA MEME SI LA SOCIÉTÉ RAYFLECT S.A. OU L'UN DE SES AGENTS COMMER-

CIAUX ONT ETE AVERTIS DE L'ÉVENTUALITÉ DE TELS DOMMAGES. EN AUCUN CAS LA SOCIÉTÉ RAYFLECT NE POURRAIT ÊTRE TENUE POUR RESPONSABLE DE QUELQUES DOMMAGES QUE CE SOIT DONT LE MONTANT DEPASSERAIT LA SOMME RECUE PAR ELLE EN PAIEMENT DE LA LICENCE DU LOGICIEL.

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## 6. Droit applicable

Le présent contrat est soumis au droit français, à l'exclusion de toute autre législation. Tout litige relatif au présent contrat sera soumis au Tribunal de Grande Instance de Paris. La nullité ou l'innaplicabilité de l'une quelconque des stipulations du présent contrat n'emportera pas nullité des autres stipulations qui conserveront toute leur force et leur portée.

En cas de rédaction du présent contrat en plusieurs langues, seule la version française fera foi.

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## 7. Résiliation

En cas de non-respect par vous de vos obligations au titre du présent contrat, celui-ci sera résilié automatiquement. Il est expressément entendu que cette résiliation aura lieu de plein droit, sans sommation de la part de la société RAYflect, ni exécution de formalités. En cas de résiliation, vous devrez détruire toutes les copies du Logiciel en votre possession.

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## 8. Intégralité, modification

Ce contrat représente l'intégralité des engagements existant entre la société RAYflect S.A. et vous. Il remplace et annule tout engagement oral ou écrit et toute communication ou accord antérieurs relatifs au présent contrat. Le présent contrat ne pourra être modifié que par voie d'avenant dûment signé par chacune des deux parties.

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