

# Mental Ray

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| <b>Name:</b>                 | Mental Ray 3.7.5x  |
| <b>Produced:</b>             | mental images, Germany   |
| <b>Operating system:</b>     |  |
| <b>Native file type:</b>     |  |
| <b>Description:</b>          | Photorealistic rendering software  |
| <b>Next version release:</b> | 2011   |
| <b>Homepage:</b>             | <a href="#">Mental Ray</a>   |
| <b>See also:</b>             | <a href="#">Render Software</a>  |
|                              | <a href="#">V-Ray</a>  |
| <b>Link:</b>                 | <a href="#">LEARN, The Catalogue</a>   |
|                              | <a href="#">Official Autodesk Support for Mental Ray Stand-alone</a><br><a href="#">Post a question to Media Centre</a>  |
| <b>Introduction:</b>         | Mental Ray is a 3D, very high-performance, ray-trace render engine for generating imagery which ranges from photorealistic to highly stylised. Mental Ray is integrated into many of the Autodesk products ( <a href="#">Revit</a> , <a href="#">Maya</a> etc). See <a href="#">here</a> for a list of products using Mental Ray.  |
| <b>Primary functions:</b>    | <p>Mental Ray's primary functions are:</p> <ol style="list-style-type: none"> <li><b>Rendering single frames</b></li> <li><b>Rendering sequential frames</b></li> </ol> <p>Similar to Mental Ray in terms of functionality is <a href="#">V-Ray</a>, <a href="#">Flamingo</a>, <a href="#">Penguin</a>. However, Mental Ray is more stable than V-Ray. Also, in terms of render quality, Mental Ray offers a far greater variety of materials options than V-Ray or the others. V-Ray is very slow when compared to Mental Ray. V-Ray is especially good for architectural renders, and Mental Ray is better suited to "experimental" renders. This is because the program offers a vast range of customisation scripts for the interface, lighting, materials and rendering.</p> <p>One interesting avenue to explore terms of functionality will be multiple composite renders. This is when the scene is rendered as a series of layers which are then compiled in Photoshop (single image) or AfterEffects (video image). This takes less time to render and offers the advantage of individual layer editing in Photoshop/AfterEffects, ultimately giving you more control over the image.</p> <p>This <a href="#">Functional Overview</a> might be of interest.</p>  |
| <b>Primary outputs:</b>      | <p>Mental Ray is a visualisation tool, it therefore produces raster images aimed at two sorts of final output:</p> <ol style="list-style-type: none"> <li><b>Print</b> Mental Ray produces hi-resolution, single raster images in many formats: JPG, TIFF, PNG, BMP.</li> <li><b>Video</b> Mental Ray also exports image sequences and batch renders, as well as movie files, such as MOV.</li> </ol> <p>Mental Ray is a very broad visualisation tool. Plug-ins have been developed which cater to specific render aesthetics, such as the "sketch" and "cartoon" aesthetic amongst many others. These plug-ins operate in a similar way to the "filter" functions in Photoshop. If you are rendering only a single image, or a series of single images (ie not video) then it will be most likely easier to apply the aesthetic as a filter in Photoshop after rendering. However, if your intention is to make video then it will be easier to apply the aesthetic as a plug-in in Mental Ray itself. This is because to apply filters to video footage in AfterEffects is more time consuming and difficult than using a plug-in at the point of rendering.</p> <p>Outputting from Mental Ray is generally easier and faster than from V-Ray. The "preview" function in Mental Ray allows for short-cut rendering and box high-lighting, significantly reducing the render testing stage.</p> <p>Batch-rendering can be achieved relatively easily which greatly speeds up the rendering time. Batch-rendering is when the scene to be rendered, as an image, is split over several computers and rendered separately as a strip before being reassembled. This produces better image quality.</p> <p>It is interesting to note that most render engines will only produce raster images. If you are after a vector image (vector render) of a scene then <a href="#">Rhino</a> can produce these, as can <a href="#">ArchiCAD</a>.</p> <p>Note that if you are wanting large (A1) renders then your scene must be batch-rendered, otherwise your machine will crash. On this note, bear in mind that the more faces/lights/materials in your scene the longer the render will take. Hide the faces which are not going to be seen in your render.</p> |
| <b>Usability:</b>            | <p>It must be said that Mental Ray can be tricky to get to grips with. The terminology seems arcane, there are a tonne of numbers all across the interface and the values these numbers represent are not especially obvious. Mental Ray was originally designed for professionals and not for students which perhaps goes some way in explaining the complexity and unfriendliness of the interface.</p> <p>However, the interface is constantly improving and the release expected in 2011 is supposed to make a lot of progress in this area with significant improvements in usability and legibility. In order to understand the terms found in Mental Ray's user interface we suggest the <a href="#">Glossary</a>. However, to really get a proper, visual grasp of what the terms mean it will be necessary to spend some time playing with the sliding bars and examining the results in the preview/render.</p> <p>So, if V-Ray's interface is more intuitive than Mental Ray's, Mental Ray on the other hand offers the advantage of being far more customisable, more stable and in many ways faster. Customisation can be achieved with scripts, as can the setting of certain render parameters. Speed is mainly seen in Mental Ray's rendering time (calculating ray trace, processing image data) which is faster than V-Ray's.</p> <p>All commands in Mental Ray are inputted using graphic menus. However, it is possible to use scripts to control the render image.</p> <p>Mental Ray is compatible with many programs including <a href="#">Maya</a>, <a href="#">3DS Max</a>, <a href="#">AutoCAD</a> and <a href="#">Revit</a>, for a full list see <a href="#">here</a>. It exports in a wide range of filetypes.</p>  |
| <b>Strengths/weaknesses:</b> | <p>Over and above those strengths and weaknesses listed already, Mental Ray at present is:</p> <ul style="list-style-type: none"> <li>+ + Very well suited to 3DS Max due to a long development history.</li> <li>+ + Very convenient for architectural renders as the sun light in Mental Ray has inbuilt global positioning so that site specific and therefore highly accurate sun and shadow studies can be performed for any site in the world.</li> <li>+ Good at <a href="#">network rendering</a>.</li> <li>+ Good at using scripts to run renders.</li> <li>- Not very easy to pick up.</li> </ul>  |

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| <b>Learning support:</b> | <p>The official Forum is <a href="#">here</a>.</p> <p>To get you started Media Lab suggest the following tutorials:</p> <p><a href="#">Beginner A: Intro to Mental Ray rendering</a><br/> <a href="#">Beginner B: Understanding Mental Ray</a><br/> <a href="#">Beginner C: Understanding ray tracing</a></p> <p><a href="#">Intermediate A: Render tips</a><br/> <a href="#">Intermediate B: Global Illumination</a><br/> <a href="#">Intermediate C: Understanding the pros and cons of Mental Ray materials</a></p> <p><a href="#">Advanced A: Photometrics</a><br/> <a href="#">Advanced B: Tips on rasterizer</a><br/> <a href="#">Advanced C: Tips on motion blur</a></p> |
| <b>Additional:</b>       | <p>You will also likely find interesting:</p> <p>Forum: <a href="#">My Mental Ray</a><br/> Forum: <a href="#">CGSociety</a><br/> <a href="#">Los Angeles Mental Ray</a> user group<br/> Jeff Patton's Mental Ray <a href="#">blog</a><br/> Tonnes of materials at <a href="#">MR Materials</a></p> <p>Amazon stocks: <a href="#">Rendering with Mental Ray</a> by Thomas Driemeyer</p>  |
| <b>References:</b>       |   |
| <b>External links:</b>   |   |
| <b>Published:</b>        | First published Mon. 1 Feb. 2010  |