

Pro/ENGINEER® Advanced Rendering Extension

CREATE PHOTOREALISTIC IMAGES—BEFORE BUILDING A PROTOTYPE

A picture is worth a thousand words. That's why companies invest significant time and money into building a physical prototype that can be photographed for use in marketing materials or consumer testing.

Pro/ENGINEER Advanced Rendering Extension (ARX) allows you to produce photorealistic 3D product images for use in design reviews, marketing collateral, technical documentation, user manuals, and product packaging—without having to build a prototype. And, as your design concept changes and evolves, you can easily update your images without creating a new prototype, thus reducing costs significantly.

With Pro/ENGINEER ARX, you can render images faster, with amazing realism. Simply select a specific material and apply photo-quality properties like a smooth, glossy finish or a rough, matte finish. You can represent the product's intended environment more realistically with Pro/ENGINEER ARX than with any other application.

With the power to directly manipulate the lighting through 360° of rotation, you have the flexibility to create the perfect effect. You can also create a suitable environment for the product to be rendered in, for example, an outdoor scene or an office desktop. Additionally, you can apply special effects like fog, light scatter, textures, lens flare and depth of field to enhance the final image. These advanced capabilities not only create images that impress consumers, but they also give you back time to optimize your design, and more budget to produce collateral that will generate both sales revenue and excitement around your product.

Faster Design Reviews, More Impressive Documentation

With photorealistic images of the product in its actual environment, design reviews are much faster, and generate more enthusiasm. 3D-rendered images can also be used for consumer testing, and for tailoring the product and product launch to ensure success—at a significantly lower cost. High-quality images can also be used in technical publications, such as product documentation, white papers and user manuals.



This image of a toaster in a kitchen environment demonstrates the power of Pro/ENGINEER ARX, which brings products to life with realistic room settings, reflections and advanced lighting.

With Pro/ENGINEER ARX, your product will break into the marketplace, not only with accurate promotional material, but with stunning visuals showcasing all aspects of the product.

Key Benefits

- Improve communication via better product presentation and collateral for design, marketing, training, and customer-facing materials
- Increase time for creativity—decrease time waiting for rendering
- Achieve the highest degree of photorealism for designs
- Reduce product costs and increase efficiencies in detecting design issues, so changes can be made before costly prototypes are built

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Features and Specifications

Advanced Lighting Capabilities

- Simulate a wide range of lighting, such as spotlight, skylight and distant light
- Enhance lighting with High Dynamic Range Image (HDRI) support
- Vary shadow softness of each light, for example, by simulating sunlight
- Enable light attenuation for real-world simulation of light fall off
- Vary the intensity of each light to take into account other lights in the scene

Simulate a Wide Range of Materials

- Apply both image maps and procedural maps to a model
- Utilize bump maps to create relief and to represent material texture
- Use decal maps when applying an image on the surface, such as a company logo
- Determine the finish of the material—lacquer, satin or shiny
- Access a standard library of over 200 predefined material types
- Use dynamic texture placement to precisely map materials and finishes to surfaces

Define the Product Environment

- Set the floor, wall and ceiling position, and apply the appearance scheme
- Snap the floor, walls or ceiling to the model
- Choose a cylindrical or rectangular room
- Use real-time rendering to view the room
- Reuse predefined settings across multiple models, such as lights, rooms and effects

Special Effects

- Fog
- Depth of field
- Lens flare (best suited for point lights)
- Light scatter
- Region rendering
- Shadow control

Language Support

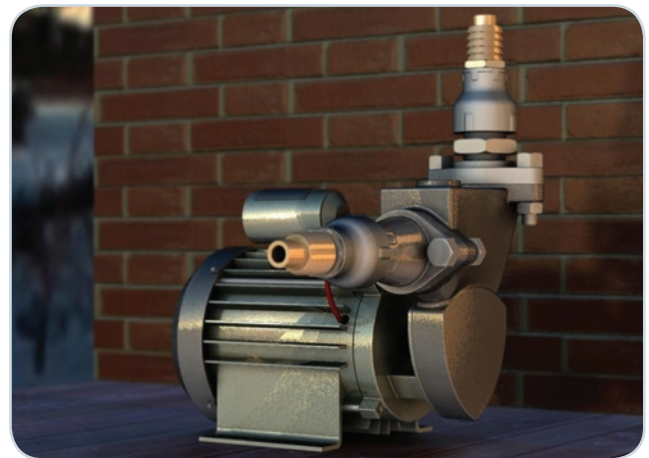
- English, German, French, Italian, Spanish, Japanese, Chinese (Simplified and Traditional) and Korean

Platform Requirements

- Microsoft Windows (Vista and XP)
- UNIX platforms (Solaris and HP-UX)



In this image, designers used Pro/ENGINEER ARX to create texture maps that realistically show carbon fiber material on the handle, and decals that are used as logos.



Pro/ENGINEER ARX lets you precisely control illumination, color and reflections to show your products in the “best light”.

For specific operating system levels, visit:

www.ptc.com/partners/hardware/current/support.htm

The Pro/ENGINEER Advantage

Pro/ENGINEER is simple to learn and use, and is available in a variety of packages designed to meet your company’s specific needs. Whether you need a cost-effective 3D CAD system that contains all the basic design capabilities, or a comprehensive Product Development System that seamlessly connects your extended supply chain, you’ll find exactly what you need in a single, fully scalable solution. Choose the package that fits your needs today and as your needs change and grow, you can easily upgrade to the package that is right for you tomorrow, which leverages the same powerful platform—this means no data translation and a consistent user experience.

With Pro/ENGINEER associativity, you can rest assured that no matter where you make a change in your design, your changes are instantly propagated throughout all downstream deliverables. And because Pro/ENGINEER Advanced Rendering stores all your design material, light, room and environment information, a simple re-rendering of the design will instantly produce a photo-quality representation of your product, updated design with the changes you just made. The integration of Pro/ENGINEER reduces rendering time because you don’t have to import your model into another application—everything can be done within Pro/ENGINEER.

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