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# Introduction

Upon successful completion of this chapter, you will be able to:

- Be familiar with the history of the visualization tools used in SolidWorks.
- Understand the basic concepts of photorealistic rendering.
- Understand and utilize the typographic conventions used in the book.



# Visualization Methods

Upon successful completion of this chapter, you will be able to:

- Understand the different display modes in SolidWorks and PhotoView 360.
- Understand system requirements for RealView.
- Understand which visualization methods depend on the CPU and which depend on the GPU.
- Properly adjust your computer monitor to match your printer output.



# PhotoView 360

Upon successful completion of this chapter, you will be able to:

- Describe the key characteristics of the PhotoView 360 software.
- Identify the principal components of the PhotoView 360 user interface.
- Start the PhotoView 360 Add-In.
- Set the PhotoView 360 Options.



# Basic Visualization Workflow

Upon successful completion of this chapter, you will be able to:

- Describe the basic steps to render a model with the SolidWorks and PhotoView 360 software.
- Apply appearances to a model, feature and face.
- Apply a scene to a model.
- Add a light to the scene.
- Render a model using PhotoView 360.



# Applying Appearances

Upon successful completion of this chapter, you will be able to:

- Understand the differences between procedural, texture and hybrid appearances.
- Apply appearances to models.
- Adjust appearance properties.
- Add scenery to renderings.



# Appearance Mapping

Upon successful completion of this chapter, you will be able to:

- Apply texture mapped appearances to models.
- Adjust texture mapping for different surfaces.
- Understand the mapping controls for the different mapping types.



# Decals

Upon successful completion of this chapter, you will be able to:

- Create and apply decals.
- Create and use decal masks.
- Adjust decal order.
- Hide decals.



# Viewpoint

Upon successful completion of this chapter, you will be able to:

- Create and save views.
- Use and adjust perspective.
- Use the camera to define views.
- Adjust the camera's aspect ratio.
- Use Depth of Field to control focus.
- Use camera lenses to control perspective.



# Output Options

Upon successful completion of this chapter, you will be able to:

- Create rendered output.
- Control preview rendering speed.
- Render using contours.
- Schedule renderings to process at a later time.
- Calculate output size.
- Save rendered output to various file types.
- Insert images in a brochure.
- Insert images into a Microsoft® PowerPoint® presentation.
- Save Alpha channel information for post-processing.



# Scenes and Lighting

Upon successful completion of this chapter, you will be able to:

- Understand the different scene elements.
- Add backgrounds to a scene.
- Understand the effects of environments.
- Control direct lights.
- Use environmental lighting.
- Control shadows in the rendering.



# Display States and Configurations

Upon successful completion of this chapter, you will be able to:

- Apply appearances in assemblies.
- Use Display States to show variations of a product.
- Apply appearances to part and assembly Display States.
- Use configurations to create different rendering scenes.
- Modify appearance properties.



# Advanced Lighting

Upon successful completion of this chapter, you will be able to:

- Understand indirect lighting.
- Understand the illumination controls.
- Create area lights.
- Create a reusable lighting studio.
- Understand and use caustics.
- Understand and use bloom.



# Reflective and Transparent Appearances

Upon successful completion of this chapter, you will be able to:

- Understand how reflections and refractions are rendered.
- Understand how the environment is used with reflections.
- Control the number of reflections and refractions.



# PhotoView 360 Gallery

Throughout this book we have concentrated on individual elements that are required to create a good rendering in PhotoView 360. Most of the tools were used in isolation. Because the goal was to learn how to use the tools and settings in PhotoView 360, most of the renderings were kept simple and not fully refined. To demonstrate the capabilities of PhotoView 360, this section includes renderings created by SolidWorks employees and SolidWorks customers.



# Color

This appendix provides additional information on:

- Color terminology.
- Color systems.
- Optical properties.
- Color swatches.
- Color schemes.



# Illumination Settings

This appendix provides additional information on:

- Illumination settings.



# Surface Finish

This appendix provides additional information on:

- Surface finish types.
- Surface finish settings.



# Hardware & PhotoView 360 Performance

This appendix provides additional information on:

- Hardware effects on rendering.
- Operating system effects on memory.

