

Adobe After Effects 3.1

Importing and exporting Cineon files

You can use the Cineon plug-ins to import Cineon 4.5 or Digital Picture Exchange (DPX) format frames into an Adobe® After Effects® 3.1 project. They can be imported as individual images or as a sequence of numbered files. Once you have imported a Cineon file you can use it in a composition and then render the composition to a sequence of numbered Cineon files.

Cineon files are commonly used for transferring motion-picture film into digital format. To preserve the full dynamic range of motion-picture film, Cineon files can be stored using up to 10 bits per channel. However, After Effects and QuickTime support 8 bits per channel. After you import a 10-bit Cineon file, you apply the Cineon Converter effect to precisely specify the most important 8 bits to use in After Effects. You can adjust the 10-bit to 8-bit conversion at any time; the results appear immediately. If you are working with a film sequence where exposure conditions vary over time, you can vary the conversion over time by setting keyframes.

Installing the plug-ins

You can work with Cineon files by installing the two Cineon plug-in files, Cineon AE Format and Cineon Converter. You can use the plug-ins on Windows® 95, Windows NT, or Mac™ OS for Power PC. The plug-ins work with After Effects only; you cannot use them with Adobe Premiere or Adobe Photoshop.

The files do not use an installer. You simply copy the files to the After Effects plug-ins folder. Once installed, Cineon options appear in the following places:

- As an option in the File Type menu in the Import dialog box
- As a new Cineon Tools submenu on the Effects menu which contains one command, Cineon Converter
- As a format option in the Output Module Settings dialog box

To install the plug-in:

- 1 Quit After Effects.
- 2 Copy the two plug-in files, Cineon AE Format and Cineon Converter, to the Plug-Ins folder in the Adobe After Effects folder. You can store the files in any folder inside the Plug-Ins folder except the Optional (Windows) or Optional Plug-Ins (Mac OS) folder.
- 3 Restart After Effects. You do not need to restart your computer.

Importing Cineon files

You can import a single Cineon frame, or a sequence of numbered Cineon files. Importing works similarly to importing other sequence formats into After Effects. For more information about importing, see “Importing Footage into a Project” in Chapter 3 of the *Adobe After Effects 3.1 User Guide*.

To import a Cineon format file or sequence:

- 1 Choose File > Import > Footage File.
- 2 Do one of the following:
 - Locate and select a Cineon file.
 - Select Cineon Sequence, then locate and select the first file of a numbered sequence of Cineon files.
- 3 Click Open.
- 4 When the Interpret Footage dialog box appears, click Treat as Straight (Unmatted), and click OK.

The Cineon file or sequence appears in the Project window. When you select it, the thumbnail preview appears garbled. This is normal, because the Cineon file is still a 10-bit per channel image that After Effects cannot display in its current form. You'll apply an effect that converts it to 8 bits per channel so that it displays properly.

Using the Cineon Converter

The Cineon Converter plug-in effect provides a high degree of control over 10-bit to 8-bit conversions of Cineon frames. The 10 bits of data available in each Cineon channel makes it easier to enhance an important range of tones while preserving overall tonal balance. By carefully specifying the 8-bit range to use in After Effects, you can create an 8-bit version of the image that faithfully resembles the original, or even improves upon it. This process of balancing the range of tones, or *dynamic range*, is similar to the techniques used when setting a proper exposure curve when scanning still images, or creating a chemical print of a film negative.

To convert a Cineon file:

- 1 Drag the Cineon file from the Project window to a composition. The image will appear garbled.
- 2 With the Cineon layer selected, choose Effect > Cineon Tools > Cineon Converter.

The Cineon Converter effect applies the default Kodak conversion parameters for editing motion-picture film on a digital system. You can refine these parameters using the Cineon Converter options in the Effect Controls window.

To control the tonal balance of a Cineon file:

- 1 Choose an option from the Conversion Type menu:

8-Bit Log to Linear Select when converting an 8-bit logarithmic non-Cineon layer that you plan to render as a Cineon sequence.

8-Bit Linear to Log Select when converting a layer containing an 8-bit linear proxy of a Cineon file into an 8-bit logarithmic layer so that its display characteristics are consistent with the original Cineon file.

Auto Log to Linear Select to automatically detect an 8- or 10-bit logarithmic Cineon layer when you plan to convert it to an 8-bit linear layer for use in After Effects. This is the default setting.

Auto Log to Log Select to automatically detect an 8- or 10-bit logarithmic Cineon layer when you plan to render it as an 8-bit logarithmic proxy.

10-Bit Log to Linear Select when converting a 10-bit logarithmic Cineon layer into an 8-bit linear layer for use in After Effects.

10-Bit Log to Log Select for a 10-bit logarithmic Cineon layer that you will render as an 8-bit logarithmic proxy. This is the preferred setting for rendering a proxy as it maintains consistent color display when switching between the proxy and the original.

***Note:** Choosing a conversion type resets existing slider values to the default values for the conversion type you selected.*

2 Make sure the 8 Bit Black Point slider is at 0, and the 8 Bit White Point slider is at 255.

3 Do the following as necessary to adjust the black point:

- If a part of the image that should be black appears lighter than black, drag the 10 Bit Black Point slider to the right until that area is black. This value is equivalent to the minimum density, or *Dmin*, of a film negative.
- If too much of the image appears black, drag the 10 Bit Black Point slider to the left until all important non-black areas are visible.

4 Do the following as necessary to adjust the white point:

- If a part of the image that should be white appears gray, drag the 10 Bit White Point slider to the left until that area is white. This value is equivalent to the maximum density, or *Dmax*, of a film negative.
- If too much of the image appears white, drag the 10 Bit White Point slider to the right until all important non-white details are visible.

Adjust white point for the lightest details that should be visible. If resolving the brightest highlights results in darkening the rest of the image unacceptably, balance everything except the brightest highlights. You can address the brightest highlights specifically in step 7.

5 Drag the Gamma slider left to darken the midtones, or right to lighten the midtones. A Gamma value of 1.7 works well on many monitors.

6 When all of the image is balanced, check the brightest highlights. If they appear as unsightly white blotches, drag the Highlight Rolloff slider to the right until details become visible. Higher-contrast images may require a higher rolloff value.

7 When the image is properly balanced, you may change the black and white points of the 8-bit version while preserving the overall tonal improvements by doing either of the following:

- If you want the darkest tone to be lighter than black, drag the 8 Bit Black Point slider to the right.
- If you want the lightest tone to be darker than white, drag the 8 Bit White Point slider to the left.

***Note:** Each computer monitor has unique display characteristics which affect your perception of color on screen. For best results when evaluating tonal balance, use the Info palette in After Effects to see the true color values of pixels as you move the pointer over them.*

Varying tonal adjustments over time

You may be working with a Cineon sequence in which lighting characteristics vary over the duration of the sequence. To compensate, you can set keyframes with different tonal adjustments for each instance where exposure conditions shift. You can use keyframe interpolation and ease handles to precisely match even the most irregularly paced lighting changes. For more information about keyframes, see Chapter 8 in the *Adobe After Effects 3.1 User Guide*.

Rendering an 8-bit proxy of a Cineon file

Cineon files are relatively large compared to other file formats, so you may want to edit using 8-bit proxies, which require less processing time and disk space than the original 10-bit Cineon files. You can render 8-bit proxy versions of Cineon files from After Effects. When you're ready to render a composition, you can replace proxies with the high-quality, full-resolution versions. Changes you made to the proxies are then applied to the original Cineon files. For more information, see "Substituting a Proxy for Footage" in Chapter 3 of the *Adobe After Effects 3.1 User Guide*.

To render an 8-bit proxy of a Cineon file:

- 1 Import a Cineon file or sequence. For more information, see "Importing Cineon files" on page 1.
- 2 Convert it to 8-bit color, making sure that Auto Log to Log or 10-bit Log to Log is chosen from the conversion Type menu in the Effect Controls window. When you choose Auto Log to Log or 10-bit Log, the Cineon Converter effect automatically sets the sliders to reproduce the dynamic range of the original Cineon image. For more information, see "Using the Cineon Converter" on page 2.
- 3 Do one of the following:
 - Drag a Cineon composition into the Render Queue, click Output To, specify a location and filename, and click OK.
 - Select a Cineon composition, choose Composition > Make Movie, specify a location and filename, and click OK.
- 4 In the Render Queue window, click Output Module and choose the video or still-sequence format you want to use from the Format menu, such as QuickTime.
- 5 Make sure Millions of Colors is chosen in the Depth menu, so that the resulting file will be 24-bit color (8 bits per channel with no alpha channel).
- 6 If desired, you can click Format Options to customize settings such as compression. For proxies, picture quality only needs to be good enough to distinguish one frame from another or evaluate colors properly. Click OK when finished.
- 7 Click OK to close the Output Module Settings dialog box. If desired, you can click Render Settings to set other options appropriately for proxies.
- 8 In the Render Queue window, confirm all settings for the composition and click Render. For more information about setting up rendering, see Chapter 10, "Rendering a Movie," in the *Adobe After Effects 3.1 User Guide*.

Applying masks and effects to Cineon files

The Cineon Converter plug-in effect must be applied to a Cineon layer for it to display properly in After Effects, and the Cineon Converter must be the first effect applied to the Cineon layer. Also, you can't apply a mask directly to a Cineon layer. This affects how you build compositions in the following ways:

- You can apply an effect directly to a Cineon layer. However, always make sure other effects are applied after the Cineon layer. To check this, select the Cineon layer, choose Layer > Open Effect Controls, and make sure Cineon Converter is the first effect listed in the Effect Controls window. If necessary, you can drag the Cineon Converter effect to the top of the window.
- You cannot apply the mask directly to a Cineon layer because a mask is applied to a layer before effects, such as the Cineon Converter. Instead, select the Cineon layer, choose Layer > Precompose, select Move All Attributes Into The New Composition, and click OK. This replaces the Cineon layer with a new composition containing the Cineon layer, isolating the Cineon layer by one level in the composition hierarchy. Now you can apply a mask to the new composition and it will be applied to the Cineon layer within.
- If masking is directly applied to the Cineon layer or an effect precedes the Cineon Converter effect, an error message will appear. To correct the error, remove any masking and verify the order of effects as described earlier.

For more information, see “Working with a Mask” in Chapter 6, “Precomposing” in Chapter 9, and “Working with Effects” in Chapter 7 of the *Adobe After Effects 3.1 User Guide*.

Rendering a Cineon file or sequence

You can render any composition to Cineon format, even compositions containing non-Cineon layers. This converts the 8-bit-per-channel color in After Effects to the 10-bit-per-channel color in the Cineon format. Accordingly, you can apply conversion parameters that reverse the values you applied when you used the Cineon Converter plug-in to convert a Cineon file.

To render a Cineon sequence:

1 Do one of the following:

- Drag a composition into the Render Queue, click Output To, specify a location and filename, and click OK.
- Select a composition, choose Composition > Make Movie, specify a location and filename, and click OK.

2 In the Render Queue window, click Output Module and choose Cineon Sequence from the Format menu.

3 Click Format Options.

4 In the File Type section, select Logarithmic or Linear depending on the requirements of the project that will receive the sequence you are rendering.

5 Specify the 8-bit to 10-bit conversion parameter values using any of the following sections in the Cineon Conversion Parameters dialog box:

Predefined Conversions For general conversion scenarios, click one of the following buttons:

- **Standard** applies the standard Kodak conversion parameters for processing film digitally.
- **Video** applies a narrower 8-bit input range than Standard, to compensate for digital video characteristics.
- **Full Range** applies a linear conversion of the entire 8-bit tonal range to the entire 10-bit tonal range, making no adjustments for digital processing or video display.

Conversion Parameters For conversion scenarios that are neither predefined nor saved as presets, type values for the following options:

- **Black-Point (10 bit)** is the darkest value you want the resulting file to use in 10-bit space.
- **Black-Point (8 bit)** is the darkest value that you want to convert from the 8-bit file. This will be converted to the Black-Point (10 Bit) value during rendering.
- **White-Point (10 bit)** is the lightest value you want the resulting file to use in 10-bit space.
- **White-Point (8 bit)** is the lightest value that you want to convert from the 8-bit file. This will be converted to the White-Point (10 Bit) value during rendering.
- **Current Gamma** is the Gamma setting of the current video display. Because the gamma of the current video display affects your perception of image adjustments, the inverse of this value will be applied during rendering to help equalize the image for display on other systems.

- **Highlight Expansion** specifies how much to expand the tonal range used for highlights in the resulting 10-bit file. A value of zero results in no adjustment; higher values increase the highlight expansion. If Highlight Rolloff (the opposite of Highlight Expansion) was applied to the composition, the Highlight Rolloff value is usually appropriate for Highlight Expansion.

Presets Load or save all settings in the Conversion Parameters dialog box using buttons in this section:

- To apply Conversion Parameters dialog box settings saved as a file, click Load, locate and select the file, and click OK.
- To save the current Conversion Parameters as a file, click Save, specify a location and file-name, and click OK.

6 In the File Format section, select FIDO/Cineon 4.5 or DPX. In most cases Film In Digital Out (FIDO)/Cineon 4.5 is appropriate because it is used more widely than Digital Picture Exchange (DPX) format. DPX is provided because it is a Society of Motion Picture and Television Engineers (SMPTE) standard.

7 Click OK to close the Cineon Conversion Parameters dialog box. Then click OK to close the Output Module Settings dialog box.

8 In the Render Queue window, confirm all settings for the composition and click Render. For more information about setting up rendering, see Chapter 10, “Rendering a Movie,” in the *Adobe After Effects 3.1 User Guide*.

Saving settings using an Output Module Template

The Save button in the Cineon Conversion Parameters dialog box saves only the settings in that dialog box. To simplify the creation of Cineon sequences, you can create one or more Output Module Templates containing a complete set of Output Module settings for each rendering scenario you anticipate. For more information, see “Using output module templates” in Chapter 10 of the *Adobe After Effects 3.1 User Guide*.

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