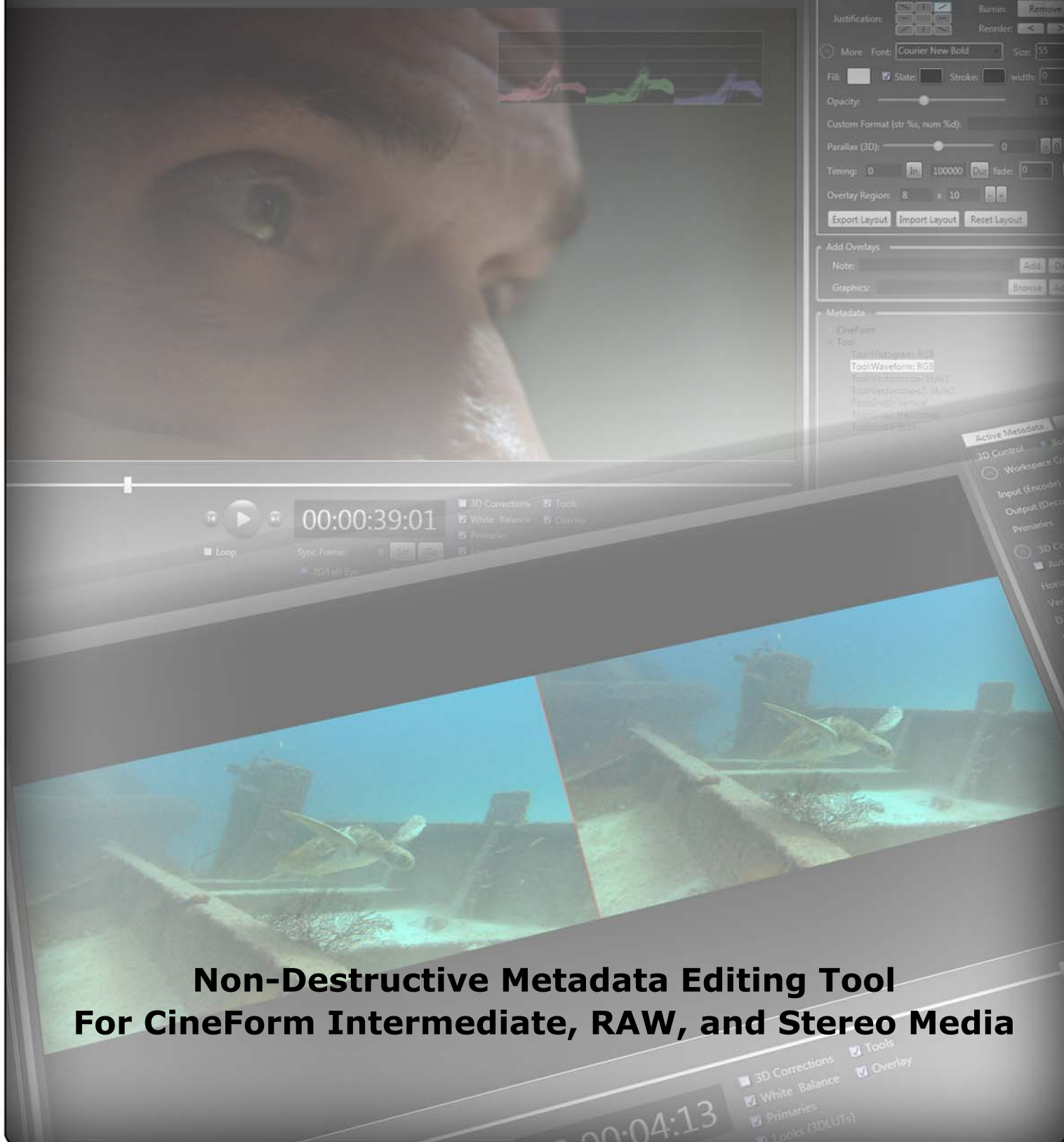


CineForm

USER DOCUMENTATION 8/1/10

FIRST LIGHT



**Non-Destructive Metadata Editing Tool
For CineForm Intermediate, RAW, and Stereo Media**

CineForm First Light Contents

Welcome to First Light

Workflow Overview

- 1 Set Up
- 2 Image View, Framing and Display Controls
- 3 Color Correction and Adjustment
- 4 Stereo (3D) Correction and Adjustment
- 5 Save Databases, Snapshots and LUTs
- 6 In Summary: The Most Versatile Workflow

Operations

- 1 Playback settings/Open GL
- 2 Enabling HDSDI
- 2 Workspace Curves
- 3 Burn-in Controls
- 3 Adding Metadata Display
- 3 Controls
- 4 Metadata Types
- 4 Displaying the Tools
- 5 Format Specific Settings
- 5 DeBayer Filtering
- 5 3D Display Types

Project

- 1 Start a work session
- 1 TIP: Plan your project structure
- 2 Importing Assets
- 2 Loading a clip in the Preview Window
- 3 Global Controls
- 3 Active Metadata Controls
- 4 White Balance
- 5 Primary Corrections
- 6 Using Look Up Tables, or LUTs
- 7 Framing
- 8 3D Corrections
- 9 Moving your adjustments between clips
- 10 Saving your work
- 11 Creating CineForm 3D Files

Panasonic AG-3DA1

- 1 One Step File Conversion
- 1 A Possible Approach: User-Created Directory Structure
- 2 Selecting Files for 3D Multiplexing
- 3 Designate a Destination Directory
- 3 Mux Settings
- 3 Conversion Settings
- 4 Processing the Queue
- 4 Queue Additional Directories

Appendix

- Framing
- Starting a Post Production Project





Sometimes a fear of commitment makes something beautiful happen...

CineForm® First Light™ is the interface that allows you access to all the available parameters inside CineForm's Active Metadata™ technology associated every CineForm media file.

CineForm has created a framework that goes beyond production quality image encoding and decoding to include control of image development and color properties in your source media including white balance, gain, gamma and lift, exposure, contrast and saturation, the color matrix, and the implementation of 3D (such as film style) LUTs - all implemented in software in real time.

In addition to color correction, First Light also includes controls for adjusting the 3D relationship between the 'eyes' in a CineForm 3D stereo pair. First Light also provides the interface for muxing (multiplexing) two single-stream files into a stereoscopic CineForm file.

Since this is all done using CineForm's Active Metadata, without permanently altering the media or "baking in" these changes, the media remains stored in its original state and available for limitless further adjustment or revision to be performed non-destructively. Active Metadata adjustments are stored with the file, and applied at the point of decode, so any application that plays the media "sees" the adjustments you've made as part of the file with no further steps necessary.

Active Metadata (as well as Passive Metadata) is kept in a database that is stored as a part of the media file, but it remains separate from the essence (the original image data) allowing Apple® Final Cut Pro®, QuickTime® Player, Adobe® Premiere® Pro and After Effects®, Sony Vegas™, Windows Media® Player, or any other application that opens your media file to play it with the adjustments you created. This allows anything from subtle to aggressive manipulation of color operations on CineForm AVI or MOV files at any time while leaving your original source images unaltered.

The concept of making adjustments to CineForm metadata is likely familiar for Prospect 4K users who have used the controls in Premiere Pro previously. First Light is the same principle with a vastly improved user interface running over a far deeper feature set, plus the ability to create projects, manage databases, and save presets spanning multiple sessions.

...and since there is no actual change to your source media, you can change your approach again and again without any source media degradation.

You don't have to fear commitment if you don't have to make any.

Welcome to First Light.

1. Set up and save the First Light project file

Your First Light project may be accessed multiple times throughout a production. It's a good practice to save the project (once there are files in the clip library) to the directory on your computer where the media and asset files are stored for the production project. This can be particularly important if you are involved in multiple production projects.

2. Importing assets

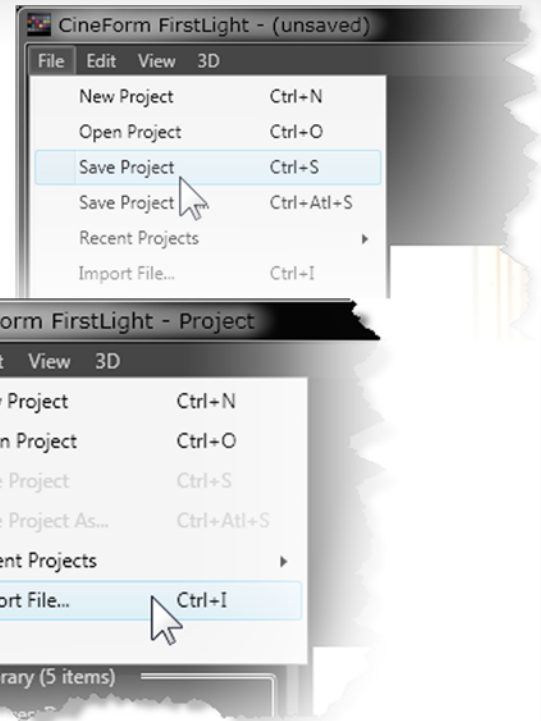
There are several ways to designate media files for your clip library.

"File> Import File..." or pressing the Control + I (Command + I on a Mac) can be used to bring in media files, or just right-clicking in the clip library window will bring up the Import File Window.

3. Make adjustments in First Light

First Light has access to an extensive list of properties for adjusting or viewing both active and passive metadata

At this stage, it may be helpful to start with the initial interface and available Active Metadata controls. Three basic functions are represented in the center and right side panels:



A. Image View/Mid-Panel

B. Color Correction/Adjustment

C. 3D Correction/Adjustment

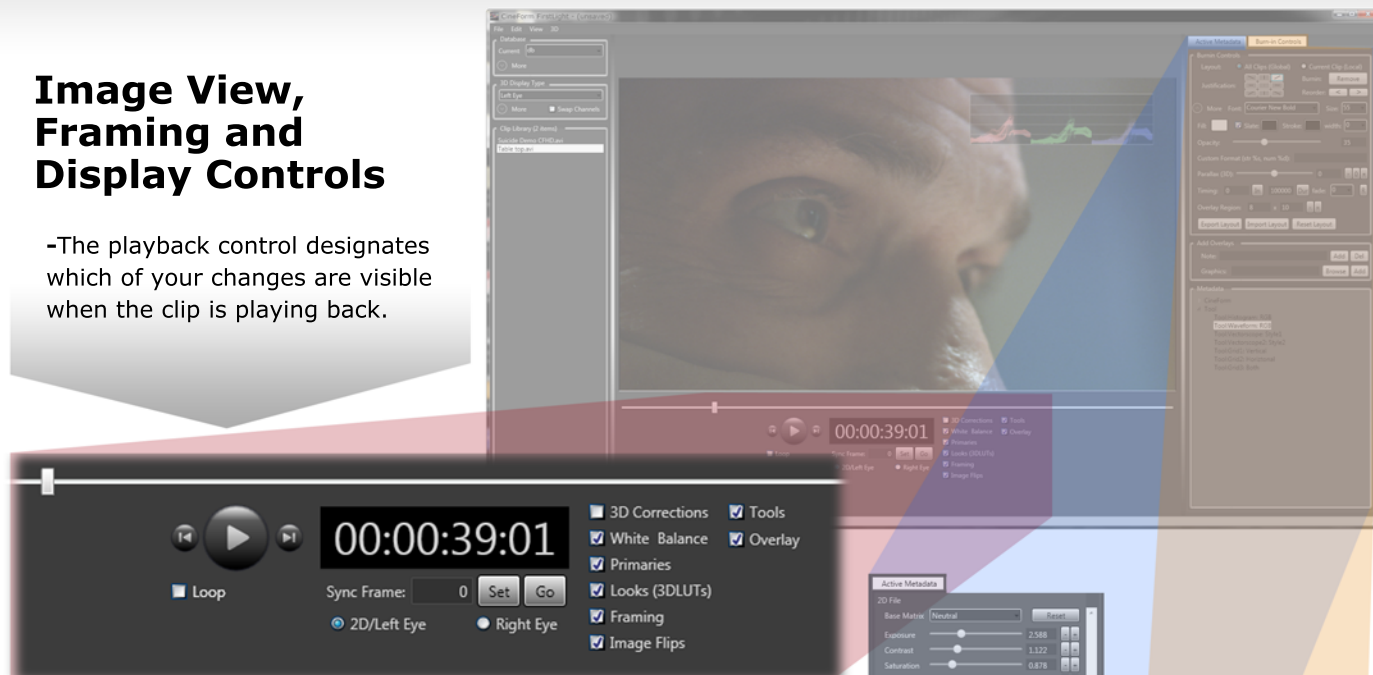
(continued next page)

CineForm First Light Workflow Overview

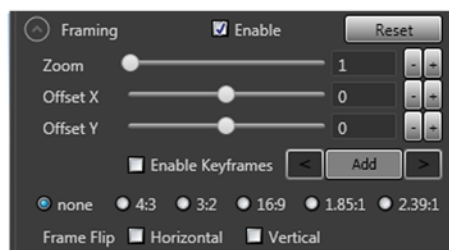
(2 of 6)

Image View, Framing and Display Controls

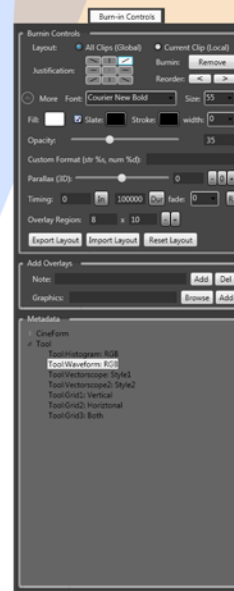
-The playback control designates which of your changes are visible when the clip is playing back.



-On the right side interface toward the bottom of the **Active Metadata** tab, there is the **"Framing"** parameter which controls zoom and 2D offset as well as frame shape crop options.



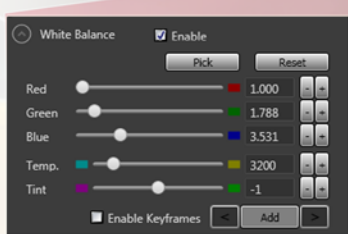
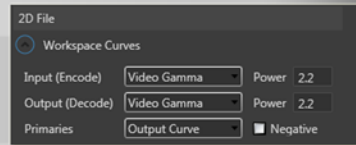
-In the **Burn In Controls** tab, there are parameters for controlling what metadata, text, and diagnostic displays are displayed on the video clip.



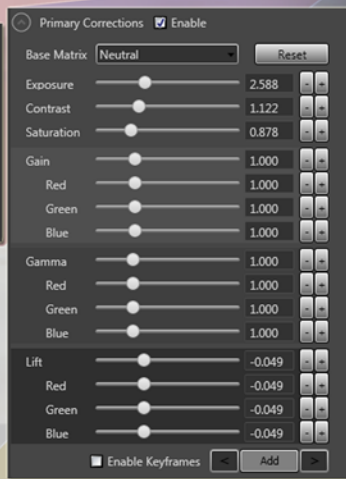
(continued next page)

Color Correction and Adjustment

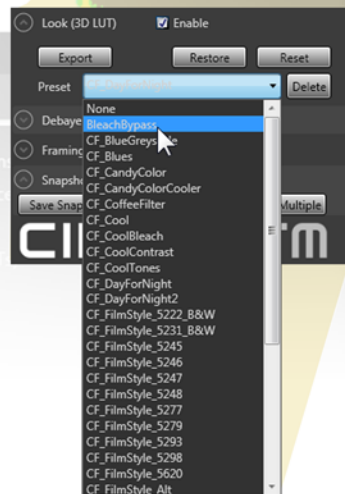
-**Workspace Curves** parameters include parameters for an Encode and Decode curve as well as a Primaries Curve to tell First Light how a clip was encoded, how it should be decoded, and how color manipulation done in First Light should be applied.



-The parameters on the right side of the interface that directly manipulate the visual (color correction) properties of the clip are in the **White Balance** and **Primary Corrections** panels.



-The **Look (3D LUT)** parameter loads a Look Up Table of an existing color adjustment or aesthetic. First Light uses the 'Look' format LUTs based on the Iridas file type and will load a LUT up to 64x64x64 resolution.

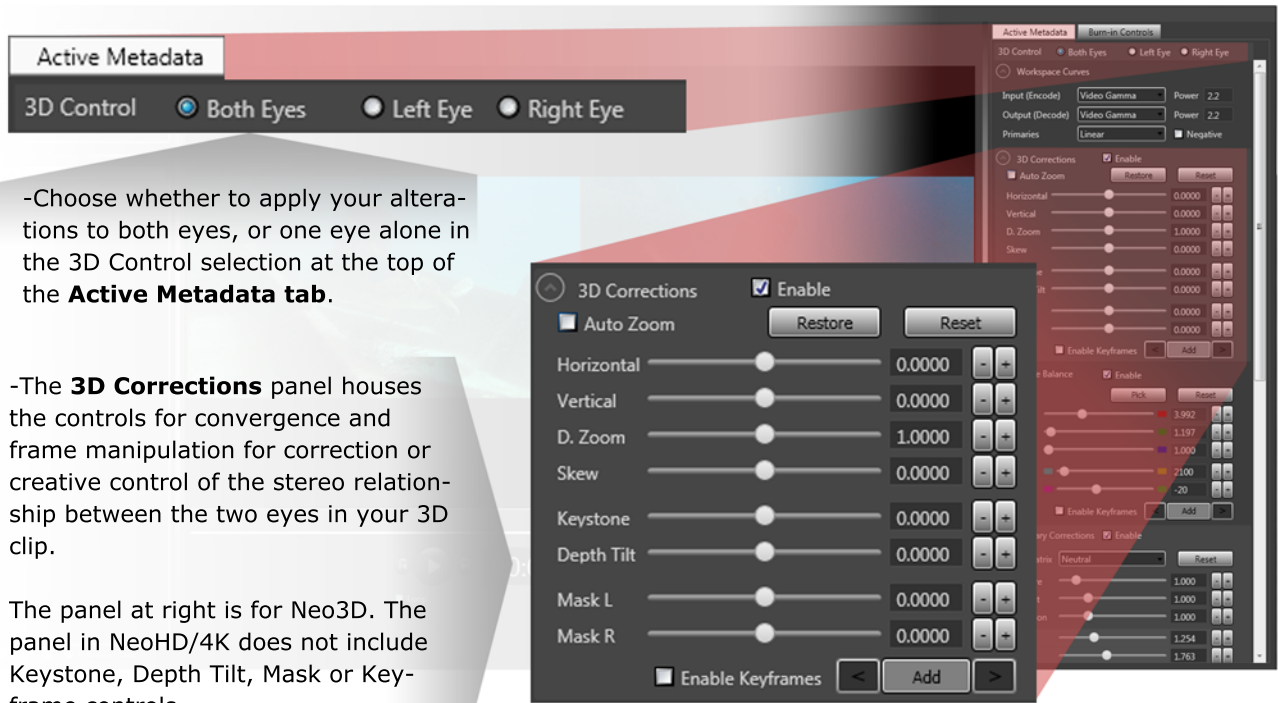


-The quality/speed of the 'Demosaic' process, used to construct CineForm RAW images from a camera that uses a Bayer Pattern sensor is controlled in the **Debayer Filter**.

(continued next page)

Stereo (3D) Correction and Adjustment

These parameters control the visual stereo relationship properties of CineForm 3D media clips. (...some stereo adjustments are available only in Neo 3D.)

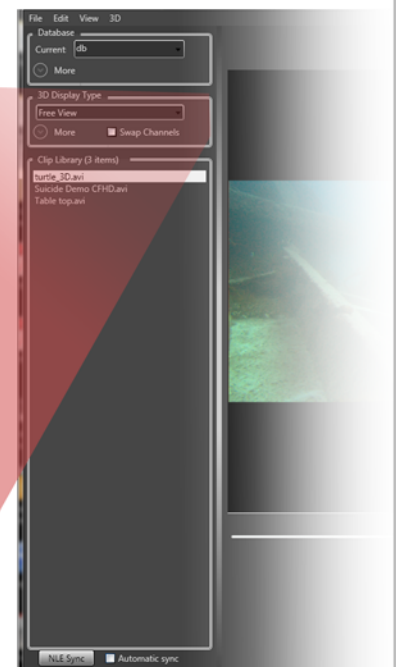
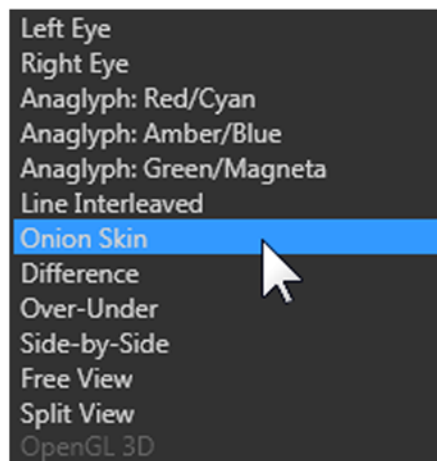


-Choose whether to apply your alterations to both eyes, or one eye alone in the 3D Control selection at the top of the **Active Metadata** tab.

-The **3D Corrections** panel houses the controls for convergence and frame manipulation for correction or creative control of the stereo relationship between the two eyes in your 3D clip.

The panel at right is for Neo3D. The panel in NeoHD/4K does not include Keystone, Depth Tilt, Mask or Key-frame controls.

-**3D Display Types** on the left side of the interface, above the clip library, controls how the left and right eye are muxed (or not) or placed for playout. If you are using a supported hardware or display card that will output CineForm 3D media to a 3D display, this is where you will choose what frame arrangement you will use to feed that display. This view setting will also affect all other playback views in your editing application or media player.

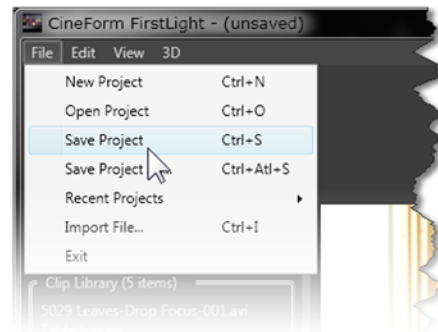


(continued next page)

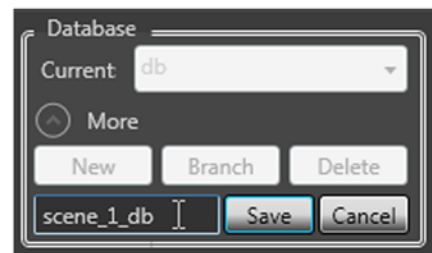
Save Databases, Snapshots, and LUTs

There are several ways to output or save your adjustments, corrections, and the aesthetic looks you create in First Light.

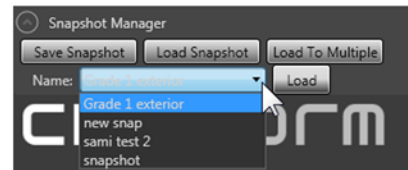
Save a Project: Saving the First Light Project (File>Save Project) preserves the current clip library listing in a file.



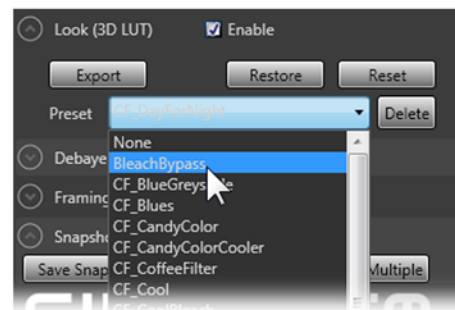
CineForm Metadata Database: The parameters you set up are stored in a database. Each clip can only have one database active at a time. You can create an additional or alternative database by expanding the Database panel (at the top-left of the interface) and clicking "New" and typing the name for the database in the text field. All the databases you create will be available to First Light in the 'Current' options and you can use the Export function to save an external file to share databases between workstations or members of



Save a Snapshot: You can save the current color alterations you've made for later recall by using the Snapshot Manager in the lower right of the interface. Saving a Snapshot will make it available for application to one, or a series of clips you select in the clip library. A Snapshot file is saved within First Light.



Export a LUT: just as First light can import and apply a Look Up Table, it can also Export a LUT containing your current set of alterations, as a .Look file. Any other application that understands and imports a .Look file can then apply your set of adjustments as a LUT.



(continued next page)

In Summary: The Most Versatile Intermediate Workflow Available

You can operate CineForm First Light as a stand alone application and prepare clips for post production in another application at a later time, or you can run First Light **WHILE YOU EDIT**. When you change the focus to First Light to make a change in a clip, when you change the focus back to your editing application and refresh the overlay (as simple as just advancing a frame), your changes will be immediately applied.

And the changes are implemented in CineForm's Active Metadata Processor, as opposed to conventional video workflows implementing changes as a separate process after the decode process is complete. The speed and versatility will surprise you.

...or if you're a past CineForm customer, you may not be surprised at all.

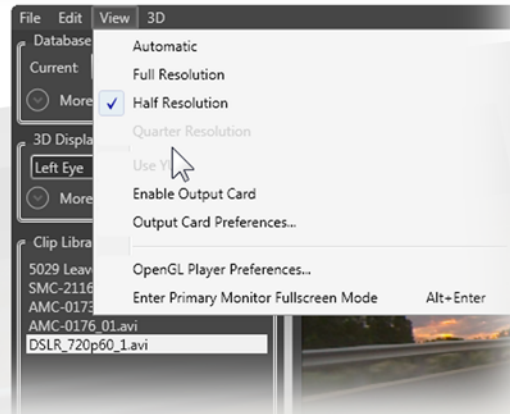


Playback settings

Decode resolution for playback

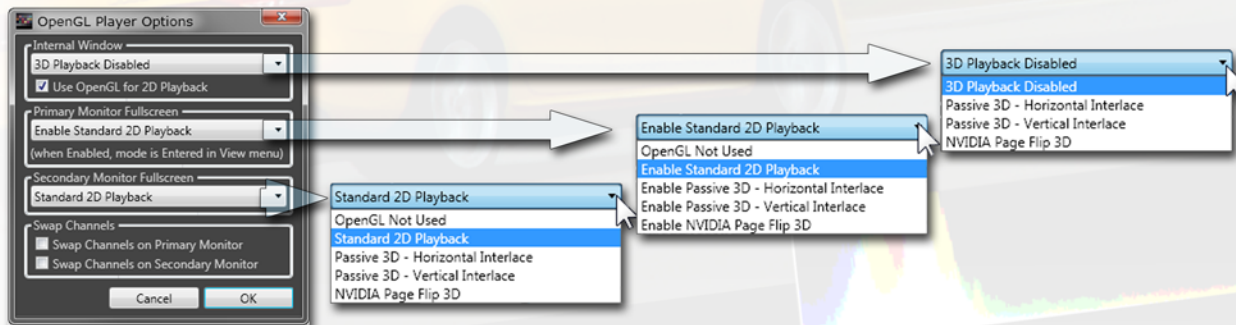
CineForm media can be played back at full, half, or quarter-resolution inside First Light by choosing an option under the View pull down menu.

Adjusting the view quality does not affect the media file, but adjusting to half resolution (or with 4K images, quarter resolution) may allow for smoother playback on some systems. Choosing View>Automatic will adjust the video resolution to fit your display.



*The 'Use YUV' setting would be for display cards that have analog component output designed for use with an outboard video monitor.

Open GL Player Options



On a Windows system with an Open GL display card, First Light will utilize Open GL to augment playback performance. **View>Open GL Player Preferences** will open the **Open GL Options** window.

The **Internal Window** refers to the video viewer inside of First Light's interface. The check box enables Open GL for 2D video playback and the drop down menu designates specific methods of displaying stereo video clips on '3D' displays, allowing you to choose Passive Horizontal, Passive vertical or NVIDIA's Page Flip 3D system.

Primary Monitor Fullscreen controls the Open GL attributes for displaying First Light's overlay full screen on your primary desktop monitor, and another set of options for a **Secondary Monitor** on your system that you may be using as a your fullscreen view of video from First Light. Each monitor has individual controls for 3D display type, or an option to shut off Open GL support entirely.

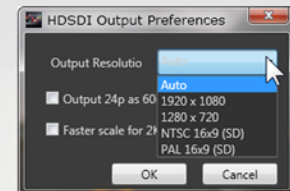
For 3D stereo media, the ability to swap channels or 'eyes' is controlled for the primary and secondary monitor individually with check boxes at the bottom of the window.

(continued next page)

Playback settings

Enabling HDSDI Output

With a compatible AJA or Blackmagic HDSDI card installed on your system, you can output directly from First Light to your HD display and /or your external HDSDI waveform and vectorscope. Choose **View> Enable Output Card** to activate the HDSDI option and use **View> Output Card Preferences** to choose your Output Resolution manually, or to view clips in their native resolution, leave the setting as '**Auto**'. *Note that 2K and higher resolution material will be scaled to 1920x1080 for playback.*



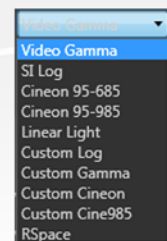
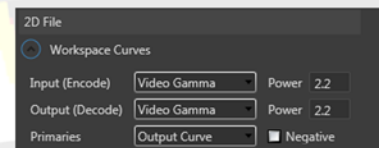
If you are viewing your 24 fps material on a 29.97, 1080 interlaced monitor via HDSDI, you can check the '**Output 24p as 60i**' option to add pulldown for viewing. Check '**Faster Scale for 2K and 4K source**' for more fluid playback of large-raster material on systems having difficulty maintaining framerate during playback.

Playback of First Light changes in Premiere Pro and Final Cut Pro via an AJA Kona card is also supported so you can operate an edit session and work with First Light and see all adjustments immediately via HDSDI output.

Workspace Curves

The Encode Curve present in an image that does not have a linear grayscale is often referred to in industry slang as simply "gamma".

This curve, and the nature of its power function are the basis for encoding images for viewing on display systems that are not linear. Since First Light displays your clips in order for you to make visual decisions, it needs to present the image accurately. In order to do this, First Light needs to know the nature of the encoded curve used when your footage was created to properly interpret it. You would set **Input (Encode) Curve** to this value using the presets in the menu, or enter in a custom value in the '**Power**' space.



The **Output (Decode) Curve** is a separate function, designating how the image will be presented on your display as you work. The normal practice would be to use the same curve specified as the input curve.

Identifying the encoder curve provides the metadata to the CineForm decoder engine so that it can apply the inverse curve to restore to linear light.

Ideally, the '**Primaries**' curve would then be set for 'Linear Light' under most circumstances. You can also choose the current output curve. While this is a matter of each user's choice, applying color adjustment in linear light is considered a best practice in the industry and will make your results far more predictable as you move through the rest of your post production process.

(continued next page)

Burn-in Controls

Adding Metadata Display

Clicking on the **'Burn-in Controls'** tab will bring it to the front.

Inside the panel are the controls for creating information and graphic overlays for your clips. Displaying metadata on the clip image during playback could serve a wide variety of purposes from displaying clip timecode on the image in your editing environment to later create a timecode "burn" copy for approval, or you may place a slightly opaque company logo over footage you want to keep secure as a watermark.

You may also want to display diagnostic displays such as waveform, vectorscope, or histogram information while you make color adjustments.

Controls

The **'Burn-in Controls'** panel may be collapsed when you first open it. Click the **'More'** button along the left side to expand it and make all controls visible.

The **'Layout'** property on top controls whether your changes will be assigned to all clips, or just the one that is currently selected and in the mid-panel.

'Justification' controls allow you to place a given overlay item in the screen, corner, or center justified. The **'Add/Remove'** button acts on the chosen item with its function changing based on whether the item is currently displayed or not. A series of items can be shifted in order on the screen using the **'Reorder'** function.

Text or numeric metadata displays are defined by the font, size, color and opacity controls. Each item can be assigned a different set of values (perhaps out of several lines of text, one needs to be larger...or more opaque).

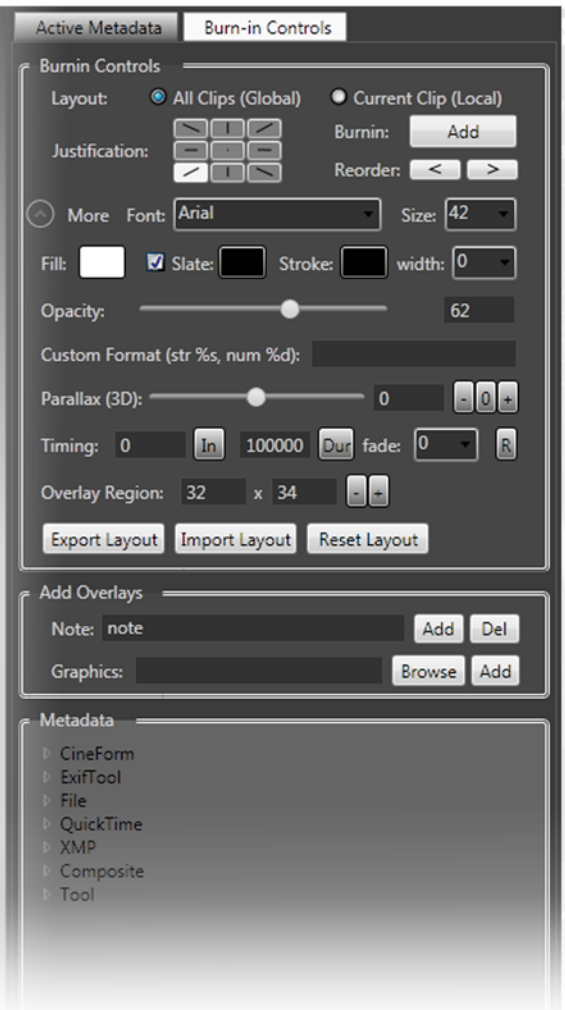
The **'Custom Format'** text field allows you to add a custom text string to a metadata value.

The **'Parallax 3D'** control is for placement of text into a 3D clip, determining its apparent "depth."

The **'Timing'** controls can bring an item on and off screen at specified points using a set in-point and a frame duration, and the item can fade on and off for a set duration. Use the **'R'** button to reset these properties.

Define the "borders" of your placement area on screen by defining the **'Overlay Region'**. In the next panel down, you can type a custom piece of text and place it on screen, and you can specify a graphic file (.PNG format) such as a logo or copyright watermark, etc. for placement as well.

Save your configuration for later recall using the **'Export and Import Layout'** buttons, and use the **'Reset Layout'** button to clear a layout's parameters and start over.



(continued next page)

Burn-in Controls

Metadata Types

The **'Metadata'** panel displays the types of metadata that are available inside a given file. Depending on a clip's origin, the amount and type of information vary widely.

While software registration data like your "hardware fingerprint" or registered user name is probably not important for video purposes, the timecode value under the 'CineForm' listing is probably one of the most frequently displayed values in the metadata selection.

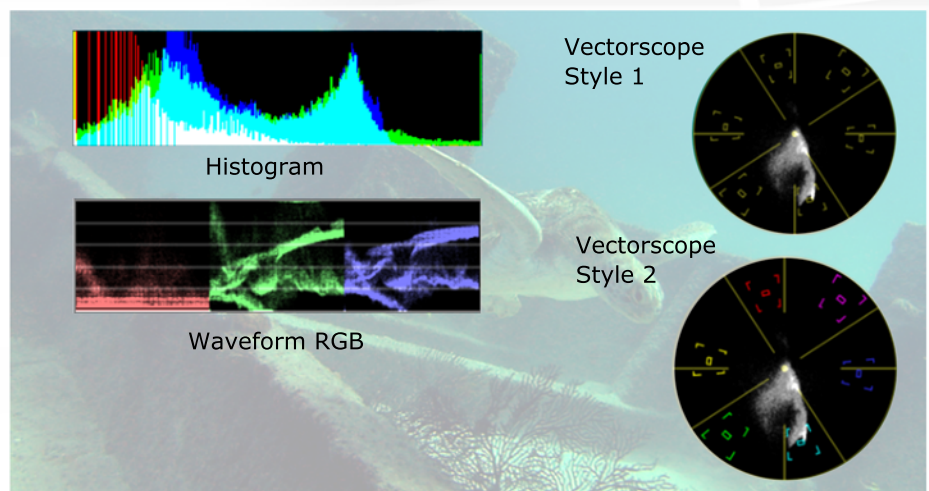
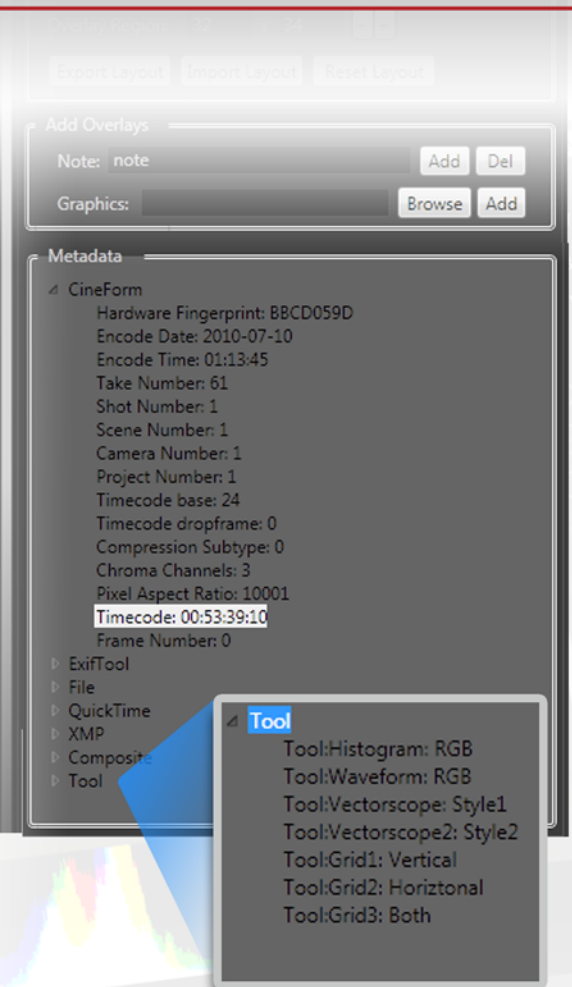
The additional listing under CineForm that will be a constant no matter what the source material, is the 'Tools' listing.

Displaying the Tools

The 'Tools' listing holds the display items that you would use for accurate technical assessment of the visual properties of your image as you make adjustments.

Use the screen placement, sizing, and opacity tools to place your technical displays over your video. As with all metadata 'Burn-in' items, if they are applied globally, you will want to be sure to shut them off before doing any video export or mastering from your NLE system, as they will "bake in" at the point any video is re-encoded.

In addition to the color and luma information supplied by the traditional diagnostic displays, you can also deploy vertical and horizontal grids to be used as alignment aids, particularly when working with 3D material and altering the relationships between the left and right eyes.



(continued next page)

Format Specific Settings

CineForm RAW: DeBayer Filtering

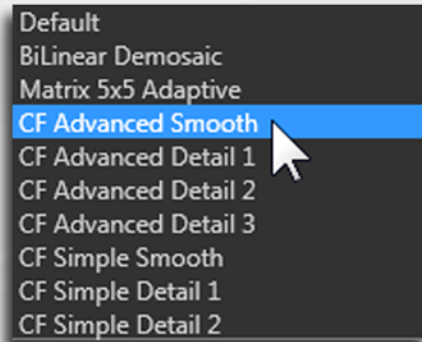
Many RAW files are acquired on Bayer pattern image sensors, and the term that has come to describe the process of interpreting that data is "DeBayering". There are a variety of ways to implement this process, some being faster and less taxing on a computer system, others requiring more computer resources with the benefit being a higher quality, more finely detailed image.

BiLinear Demosaic is a good choice for editorial since it's a simple, fast demosaic filter suitable for real-time playback, but many would find it less acceptable for final rendered output.

When the DeBayer Filter setting is in Default mode, the BiLinear Demosaic is always used for timeline playback during editorial. During high-precision render the CF Advanced Detail 1 demosaic is used.

As you move through Demosaic algorithms from BiLinear to CF Advanced Detail 3, each level adds additional sharpening and detail, trading speed and computer resources proportionately.

You may want to evaluate different demosaic modes during render to see what level of sharpening is best suited to your needs in any given situation..



CineForm 3D: 3D Display Type

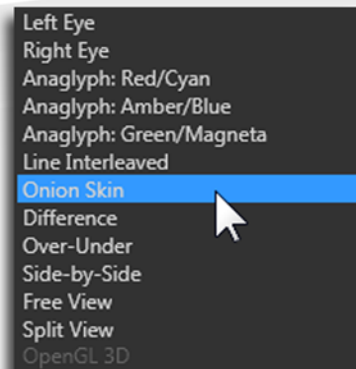
The CineForm Active Metadata processor formats playback on your CineForm 3D (Stereo) media to the 3D presentation format appropriate to give you the feedback you need for the the adjustments you're making, or to properly supply stereo video to your 3D display device.

2D single channel view: **Left Eye** or **Right Eye**

For Anaglyph Display: **Red/Cyan, Amber/Blue, or Green/Magenta**

For Polarized Display: **Line-Interleave, Over-Under, Side-by-Side**

Convergence Adjustment Assist: **Onion Skin** or **Difference**



You can change the 3D Display Type at any time during a First light session, or during editorial on your NLE. Keeping First Light running in the background during your edit session will make the 3D Display Type available to change as necessary as the setting affects all applications using CineForm 3D files.

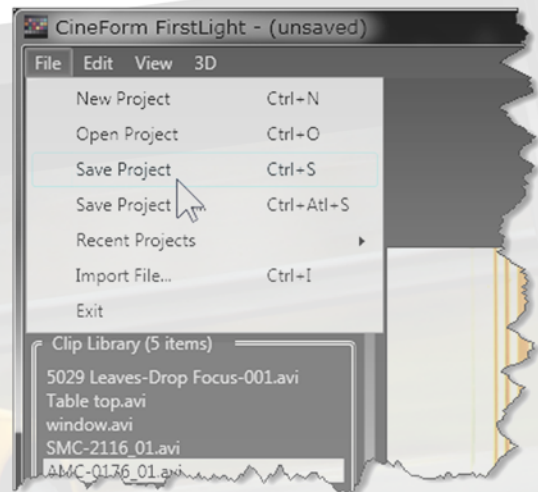
Start a work session

When you open First Light, you will start with an empty interface. The project will need to be given a name and saved.

You can load an existing project from File>Open Project, or by typing Ctrl+O. You can start working in a new project by simply importing some clips by using File>Import or Ctrl+I, or...simply click in the clip library panel to summon an import dialog.

A First Light project is a stored list of clips. The meta-data adjustments you make will be saved in other forms during your project.

You may elect to save all your First Light projects in a central location, or to save them with each project, or even by scene if you are working on a long narrative project.



TIP: Plan your project structure

Ideally, you would start setting up your First Light workflow with the project and a system in mind.

As a starting point, you may want to review the special section on **"Project Planning Considerations"** list in the appendix before you begin to work.

For many projects, going through this list of considerations may not be necessary. If you are shooting the project and editing it yourself, maybe having a rigid system isn't as critical to the project's success as it would be in an environment with many contributors. However, starting a project with some consideration for detail and and process can save time later. Getting well into a large project and realizing the naming schema needs to be revamped, the databases need to be subdivided differently, or the workflow needs some accommodation, takes you away from production while you account for it.

First Light was created to make you more productive, and having a strategy to deploy LUTs, databases, and project clip lists will help you take full advantage of the CineForm workflow.

(continued next page)

Importing assets

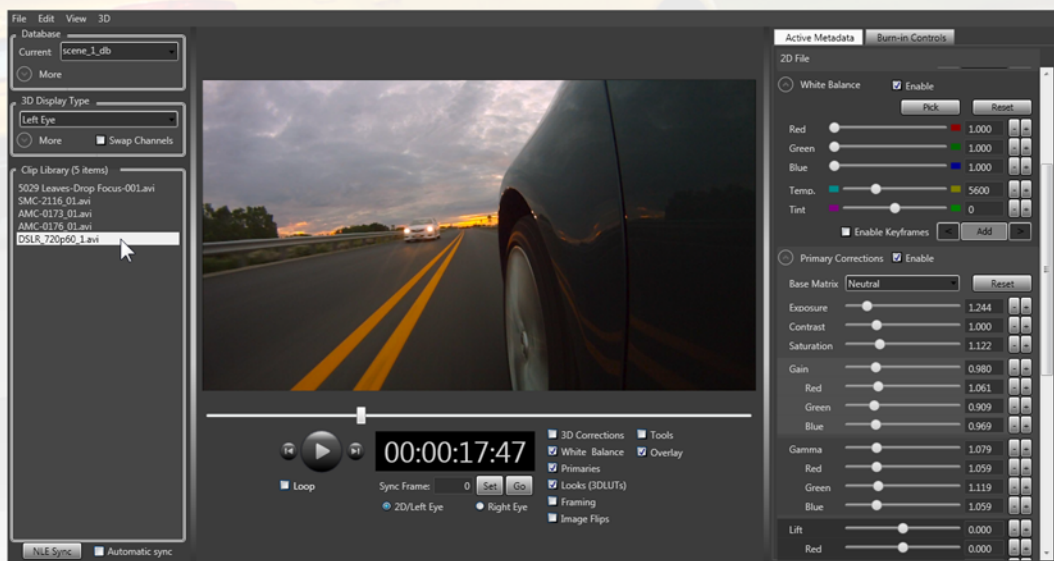
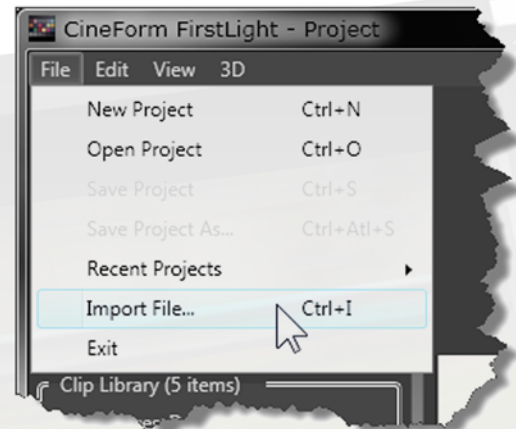
First Light can import assets in a variety of ways depending on your preferred way of working.

"File> Import File..." from the application menu.

Press the Control + I (Command + I on a Mac) to open the Import File Window

Right-clicking in the clip library window will bring up the Import File Window.

...or you can simply drag media from your computer's file system directly into the First Light clip library.



Load a clip in the Preview Window

When the clip is in the preview panel, it has the focus of all of the tools in First Light.

You will see a play/pause button below the Preview Panel as well as single frame forward/reverse buttons on either side. You can play your clip and/or examine various frames while you make adjustments. You also have the option to check the "loop" box to enable playback looping if you prefer to make adjustments while the clip is playing.

(continued next page)

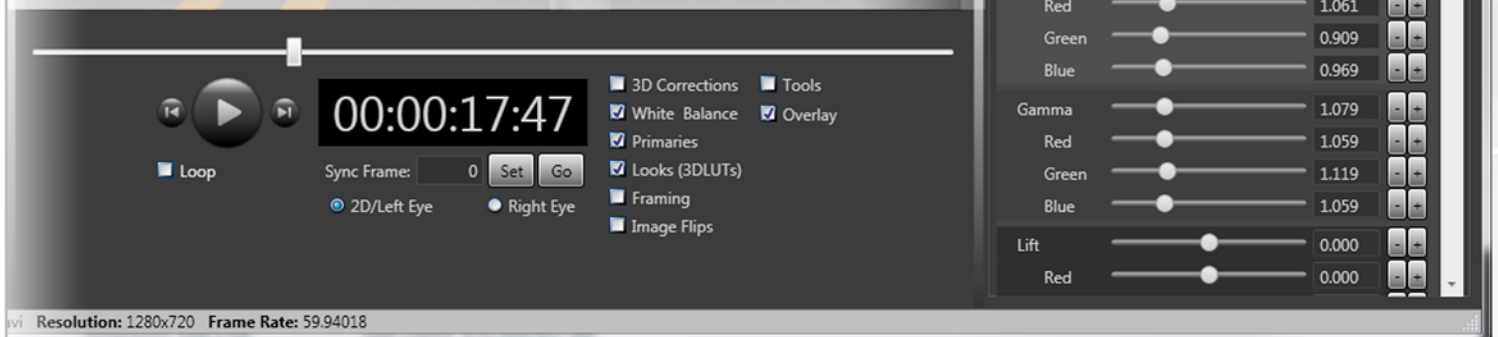
Enabling and Disabling Adjustments

Global Controls

In the mid-panel, you'll notice checkboxes for the various adjustment categories inside First Light. These 'Global Controls' affect what CineForm Active Metadata is read for all CineForm media being called by all applications on that local machine.

You may want to perform color correction with any LUTs you'll be using to be 'on' but you may find for editorial that the LUTs are less important than the fastest possible response...in this case, you would have First Light running in the background while you're editing, allowing you to simply click into First Light and shut off LUTs for all CineForm media on that machine. When editorial is finished, you could simply turn on the LUTs for the final check and exporting.

These adjustments are different than the enable/disable capability inside the adjustment panels themselves.



Active Metadata™ Controls

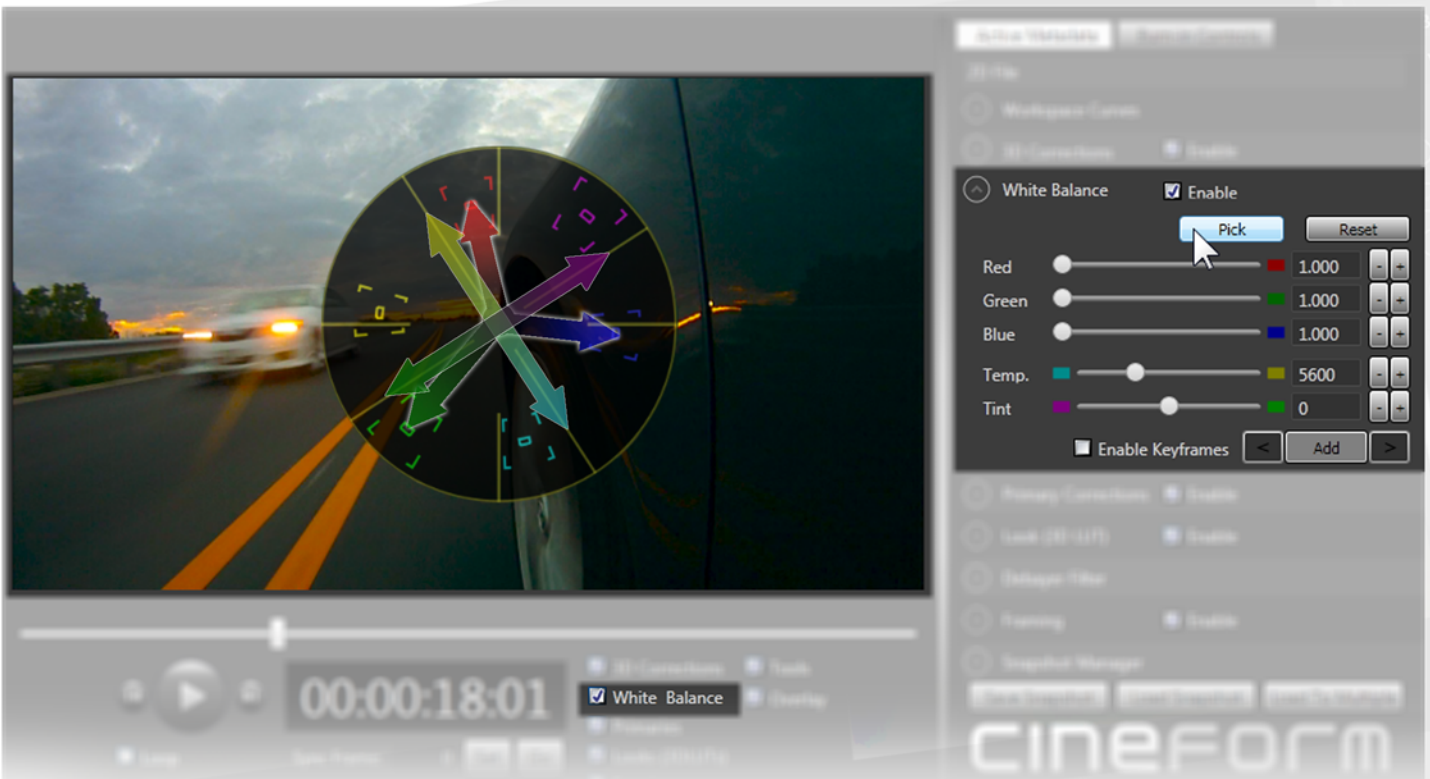
Along the right side of the First Light interface, you'll find the controls for '**White Balance**', '**Primary (color) Corrections**', managing '**LUTs**' (Look Up Tables), and '**Snapshots**', as well as the tools for doing '**3D Corrections**' on CineForm Stereo clips.

These parameters all affect the visual attributes of a clip, therefore they are considered to be 'Active Metadata'. Other metadata such as the timecode or visual diagnostic displays available in the '**Burn-in Controls**' can be exposed and displayed, but not changed. CineForm refers to these attributes as Passive Metadata.

(continued next page)

Making Adjustments to your footage

White Balance



Often the initial step for someone handling the color work on any footage, **'White Balance'** really refers to a general color balance. Most video cameras will be set for a white balance in the field to remove any color casts from highlights by changing the camera's perception of white to be the Kelvin measurement of the light source (often referred to as "color temperature"- usually done along with a 'black balance' to reference the camera to a neutral black with the iris closed).

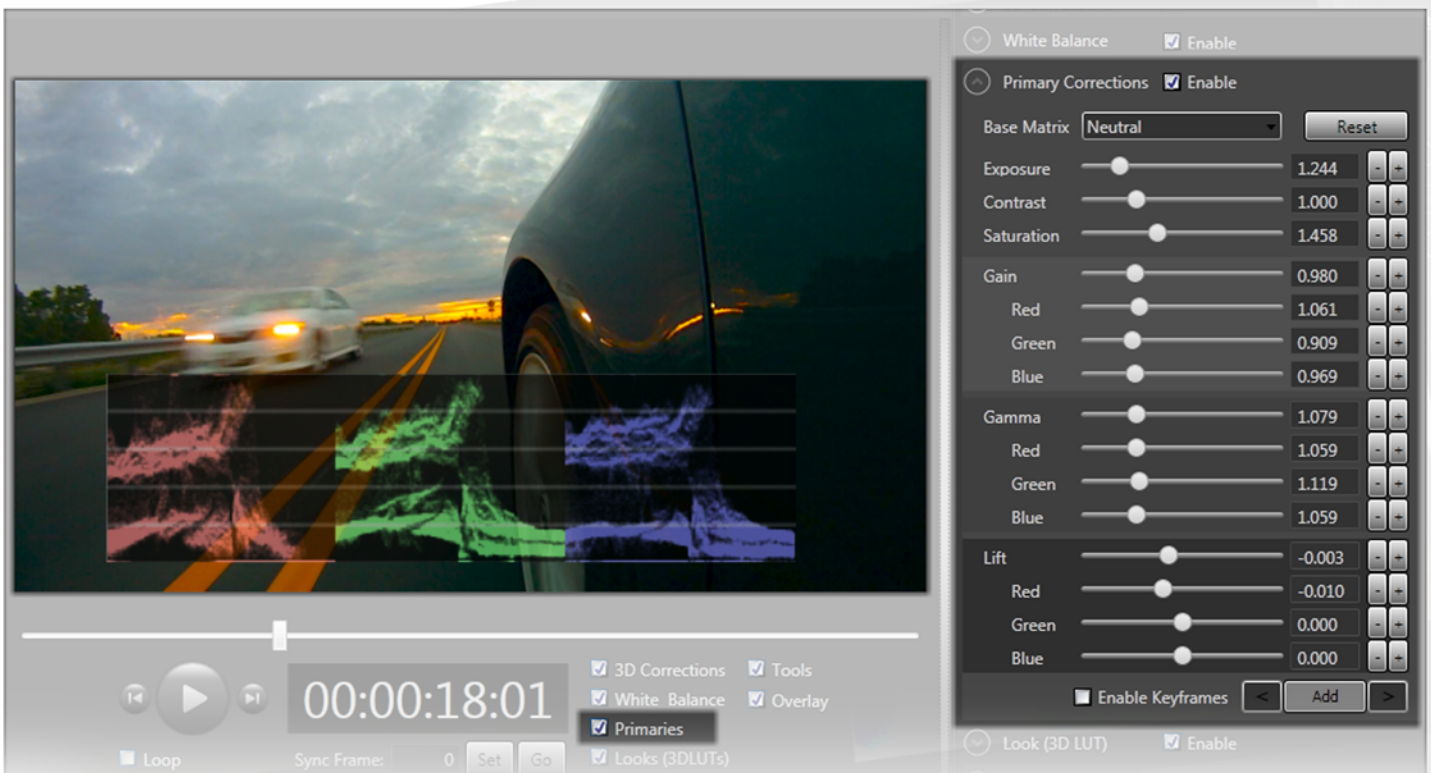
However, in cases where the footage still needs adjustment, or in the case of RAW video, **'White Balance'** controls are still a good place to start color correction operations. If there is a neutral white object in your image, you can click on the 'Pick' button and click on your image to automatically balance the entire image. The slider controls in the interface add color along the primary color axes and **'Temp.'** and **'Tint'** correlate to the 'I' and 'Q' axes on the vectorscope face as shown. White Balance can be keyframed to change over time if necessary by enabling keyframes and adjusting the values, adding a keyframe at each point necessary. Use the **'Reset'** button to return to default settings.

With all adjustments of Active Metadata, verify that both the adjustment is enabled in the panel, and that the adjustment is also enabled in the mid-panel so your changes are visible.

(continued next page)

Making Adjustments to your footage

Primary Corrections



Primary color correction typically refers to image adjustments that affect the intensities of the three primary color channels. First Light's '**Primary Corrections**' panel has adjustments for Gain (highlights), Gamma (midtones) and Lift (Shadows), with an adjustment for each primary color, as well as an overall adjustment for each of the three.

You also have an overall control for Exposure, Contrast and (color) Saturation. At the top, you'll notice the '**Base Matrix**' designation which you would typically leave set at Neutral, unless your camera has a set matrix (you would set this to "Camera"), or if you've created a custom matrix in an earlier version of Prospect 4K (set to "Custom" to preserve it).

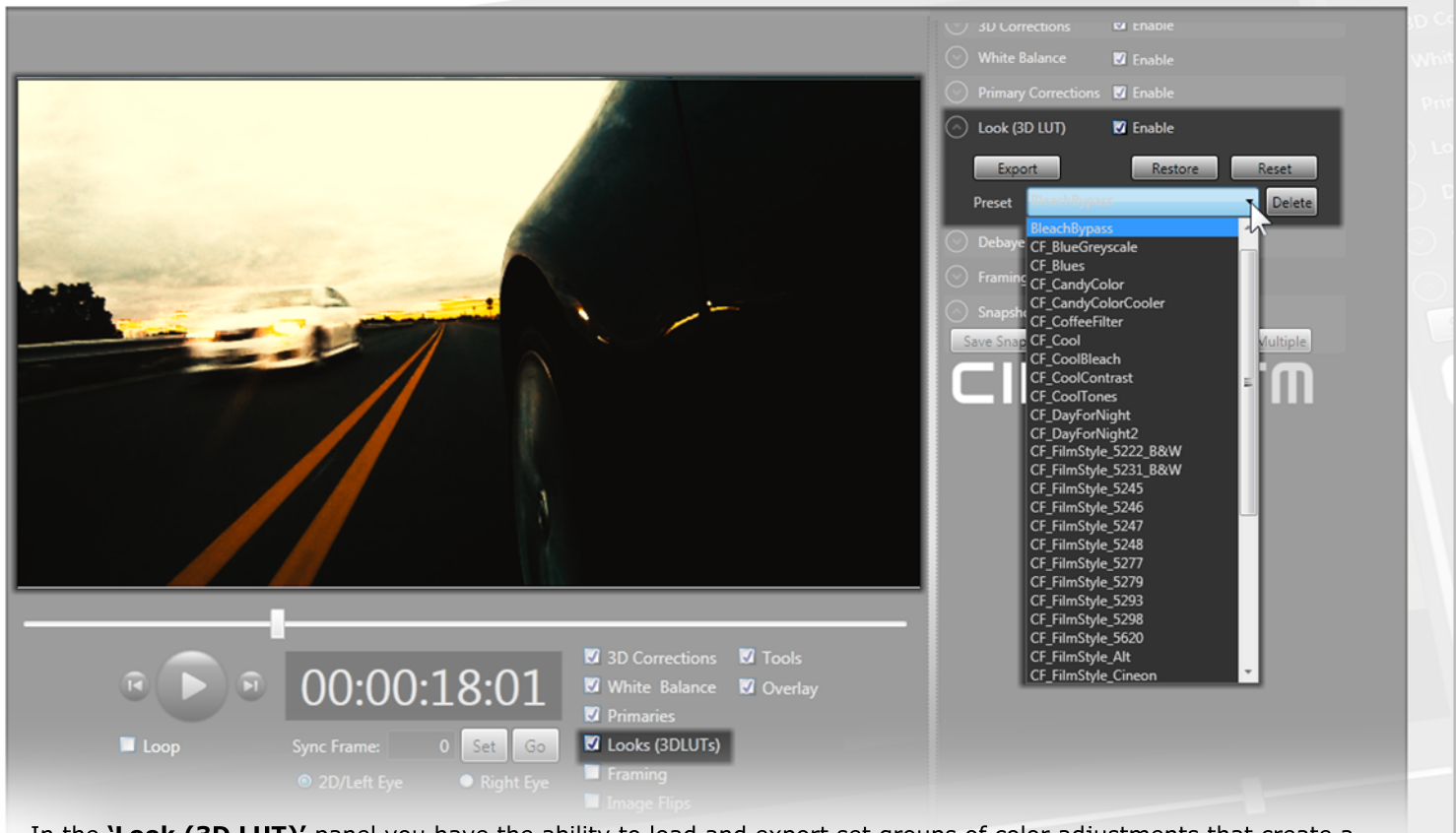
Primary Corrections can be keyframed to change over time if necessary by enabling keyframes and adjusting the values, adding a keyframe at each point necessary. Use the '**Reset**' button to return the panel to default.

With all adjustments of Active Metadata, verify that both the adjustment is enabled in the panel, and that the adjustment is also enabled in the mid-panel so your changes are visible.

(continued next page)

Making Adjustments to your footage

Using Look Up Tables (LUTs)



In the **'Look (3D LUT)'** panel you have the ability to load and export set groups of color adjustments that create a specific aesthetic. Valid Look files match the Iridas .Look format and support up to 64x64x64 resolution. Look files can be created on any PC or Mac using Iridas Speedgrade OnSet and copied to your system with First Light installed. Double-clicking on a .Look file within Windows Explorer will register it for use on the system.

Clicking on the **'Preset'** option field will display a list of the Looks that are installed on your system. First Light ships with 35 Look files for your experimentation. You can save specific sets of adjustments as .Look files as well by using the 'Export' button. Once you exported the .Look, you can make it available to your system by accessing it from your OS and double-clicking on it.

Use the **'Restore'** button to return your clip to it's original LUT (if it had one), or you can **'Reset'** the LUT panel completely and start from a clean image.

With all adjustments of Active Metadata, verify that both the adjustment is enabled in the panel, and that the adjustment is also enabled in the mid-panel so your changes are visible.

(continued next page)

Making Adjustments to your footage

Framing



In the '**Framing**' panel you'll find the controls for what many of us refer to as "pan and scan". You can take your material and zoom into the frame to change your composition, and you can use the '**X-Y Offsets**' to reposition the frame.

You can also mask your composition using the various options along the bottom, ranging from a 4:3 mask, which would "pillar box" a 16:9 frame, to 2.39:1 to simulate the look of cinemascope. You can use the X-Y Offsets to reposition your shot within the mask, making the entire process transparent to your NLE or media player application.

You can also flip your image either horizontally or vertically utilizing the checkboxes. (Note that "Image Flips" is a separate enable checkbox in the mid panel from 'Framing'.)

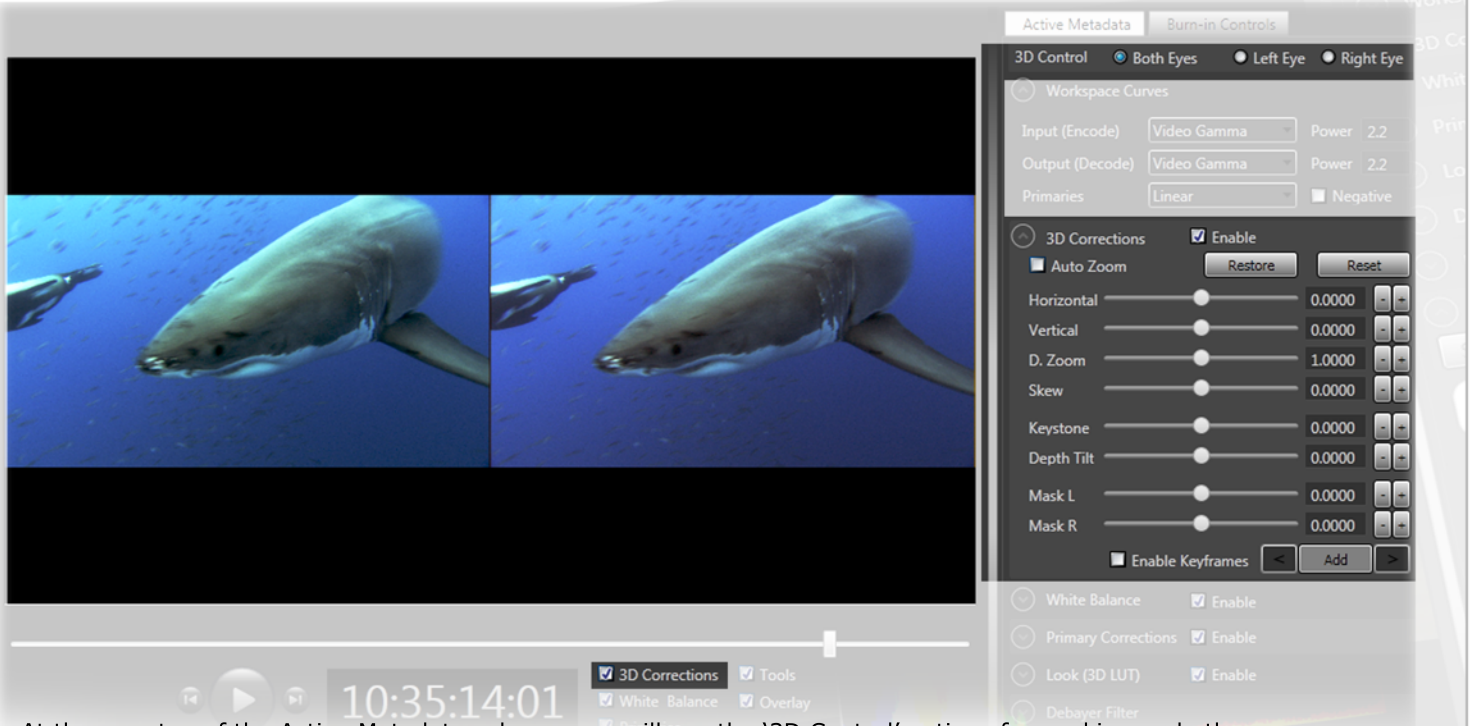
Framing can be keyframed to change over time if necessary by enabling keyframes and adjusting the values, adding a keyframe at each point necessary. Use the '**Reset**' button to return to original framing.

With all adjustments of Active Metadata, verify that both the adjustment is enabled in the panel, and that the '**Framing**' AND/OR the '**Image Flips**' adjustment(s) is also enabled in the mid-panel so your changes are visible.

(continued next page)

Making Adjustments to your footage

3D Corrections *(Keystone, Depth Tilt, Mask and Keyframing controls available exclusively in Neo3D.)*



At the very top of the Active Metadata column, you will see the '3D Control' options for working on both eyes, or one individual eye. There are times when one channel needs a slight adjustment due to camera misalignment, or some color work may be necessary on one eye when using a beam splitter camera rig. When you select one eye, your 3D Correction interface will change and add control to specifically flip the selected eye and adjust Horizontal/Vertical placement as well as zoom and skew. When 'Auto Zoom' is checked, you will notice that many of your adjustments will affect both eyes in an attempt to maintain "framing", however, complimentary adjustments are not made on the other eye unless you reset 3D Control for Both Eyes.

The Horizontal, Vertical, D. Zoom, and Skew controls work with the two eyes as alignment adjustments for your desired convergence. When adjusting Both Eyes, checking the 'Auto Zoom' box will create a zoom to eliminate any out-of-bounds framing errors caused by alignment adjustments. Use Keystone to work with footage where the camera angles were not properly aligned, and use Depth Tilt to change the relative depth of major objects in your scene, though the adjustment itself will distort your image if pushed, so use it with care. You can also mask each eye separately with the mask controls. (see: *Operations*, page 5 for more on 3D Display types and their function)

If you have Neo 3D, your 3D Corrections can be keyframed to change over time if necessary by enabling keyframes and adjusting the values, adding a keyframe at each point necessary. '**Reset**' restores the clip's original state.

With all adjustments of Active Metadata, verify that both the adjustment is enabled in the panel, and that the '**3D Corrections**' adjustment is also enabled in the mid-panel so your changes are visible.

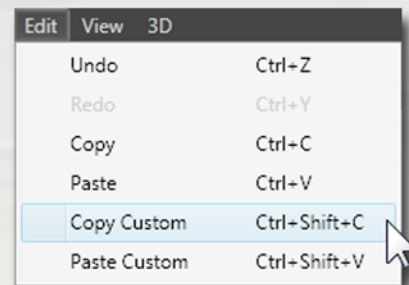
(continued next page)

Moving your adjustments to other clips

Copy/Paste and Copy/Paste Custom

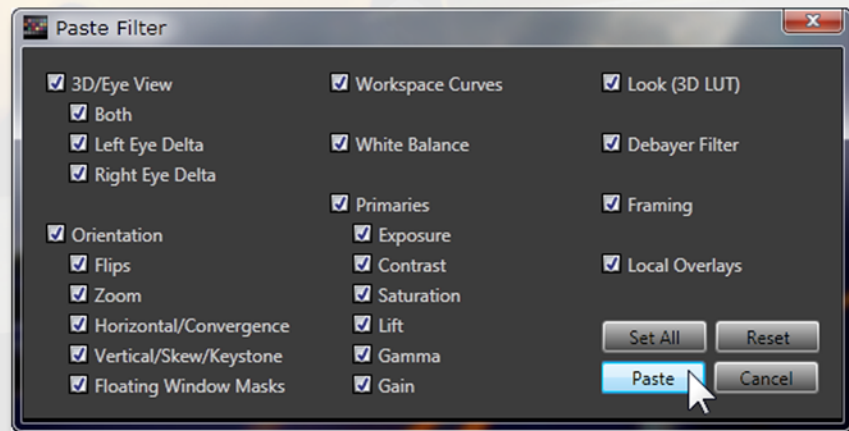
While most of us probably have a grasp of copy/paste on our computer systems, First Light expands this capability to become a very precision process.

You can, of course move one clip's settings to another clip in your project by having the source clip selected and using your copy command (Ctrl+C on Windows, Cmd+C on Mac), then you can select the target clip and paste with the appropriate 'V' key combination.



Copy Custom
Ctrl/Cmd+Shift+C

Paste Custom
Ctrl/Cmd+Shift+V



When using the 'Custom' commands for Copy OR Paste, you get a dialog that allows you to select what attributes of the source clip's adjustments you want to copy, or to paste. You may want to copy all of the attributes of a certain clip, but then paste to two other clips with two different subsets of those settings. By selecting Paste-Custom, you have the choice of what will be moved to the target clip.

(continued next page)

Saving your work.

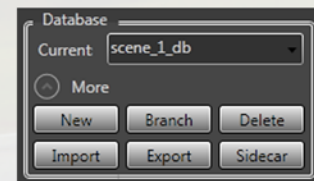
Projects

Projects in First Light store a list of assets. If you have a short production with a small number of clips, one project might be fine. On larger projects like a feature-length narrative, there may be enough scenes, locations, and story aesthetic changes that subdividing the material in some logical way makes it more manageable. Often since one scene will need similar color adjustments, keeping your material grouped by scene can make the job of tracking color on adjacent shots much easier.

Use File > Save Project or Ctrl+S (Cmd+S on Mac)

Databases

Databases are the assembled 'adjustments' that you've made while in First Light. A database has an adjustment logged for each clip that was in the project it was saved from. Each clip can only have one set of adjustments per database, but you can save multiple databases. For instance, you may have two approaches to the color correction on a given scene...you could save a database for each. For cases where you would like to create a new database that builds on the one you have currently, click on **'Branch'**.



**Save a 'Sidecar file to store the color adjustments beside the clip to send to another First Light user*

Snapshots

Snapshots are a way to save color treatments outside of databases. When you use the Snapshot manager to save the adjustments you have made on the current clip, you can call that set of adjustments back in any project using any database, and the 'Load to Multiple' feature will load that snapshot up for the entire clip library in your project...a big time saver for handling large numbers of clips with relatively similar requirements. Unlike a LUT, which locks in all the color settings as one function, a snapshot loads with all the slider values set and can be altered.

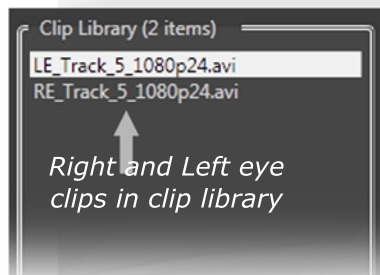
Look Up Tables (LUTs)

Look up tables, or LUTs have been the standard method of transporting color information between different production devices for some time. From the 'Look (3D LUT) panel, you can import .look files from outside sources and with the 'export' feature you can save your own. LUTs saved by First light can travel to other systems that will be involved in the project down the line from you to ensure that the right information is maintained.

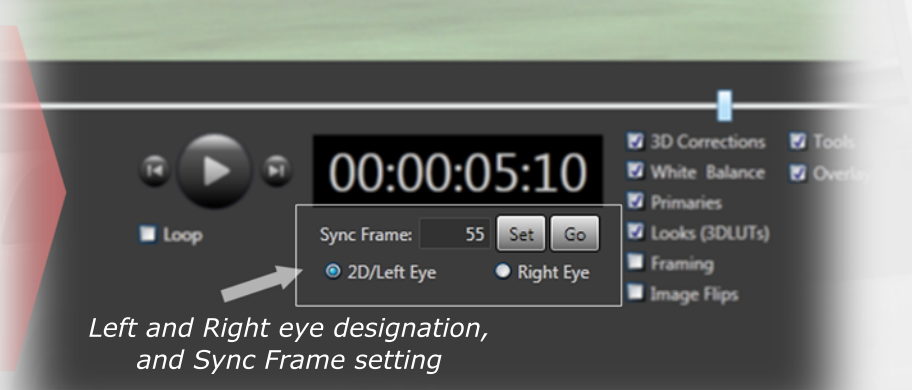
(continued next page)

Creating CineForm 3D Files.

CineForm 3D files are a combination of two source files. This process creates a new file, leaving your original media intact. The first step is to load your converted CineForm files (labeling which is left and which is right eye) into your First Light Project. Once the files are in the clip library, you'll need to declare within First Light which is the left eye and which is the right by clicking on each, and while the clip is in the mid panel, designating left and right using the buttons below the viewer.



When the two clips have been identified as left and right eye, you'll next need to identify a **'Sync Frame'**.

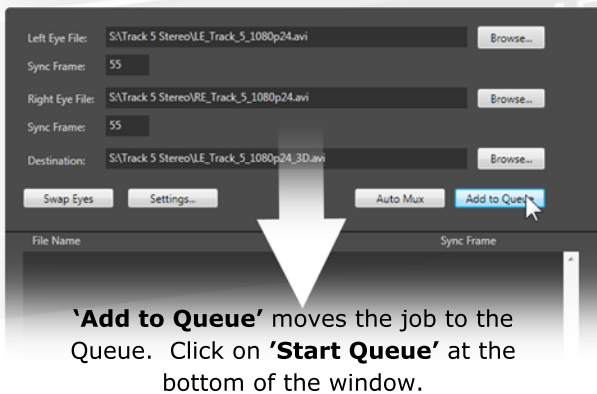


The Sync Frame is a frame you can identify in each clip as being a match. Many 3D shoots result in cameras that don't roll at exactly the same time, or there is an unintentional timecode offset. In these cases, you need to examine the clips visually and find the frame you want to use as a sync point on each clip and click **"Set"** next to the Sync Frame text field which will then display the frame number (not the timecode) you've set. When this is done for both clips, select them both in the clip library (Ctrl+Click) and select **"3D Mux"** from the 3D menu.

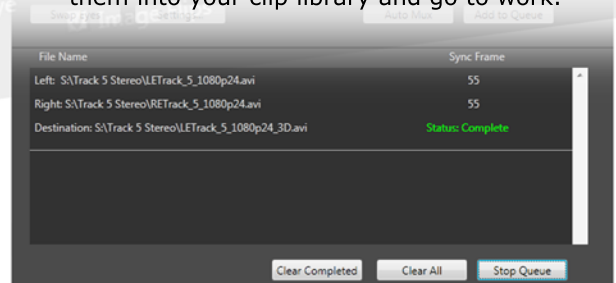


This will open the 3D Muxer window with your clips and designated sync frames already in place. After you choose a destination directory, clicking "Add to Queue" will stage the job in the Queue.

Click on **"Start Queue"** to begin processing.



Each completed job in the Queue will indicate its status. As you send each job to the Queue, you can return to First Light to stage additional clips and repeat the process. When your clips are converted, simply import them into your clip library and go to work.



Panasonic AG-3DA1 Stereo HD Camcorder One-Step Stereo File Conversion

The AG-3DA1 records video streams for right eye and left eye views to two SDHC cards. Each pair of recorded SDHC cards has both views, with each eye recorded to its own card.

Preparing your Panasonic Stereo AVCHD files for a CineForm Post Production workflow is a simple process, completed from within First Light.



Transfer your video files to your hard drive.

Using an SDHC card reader, transfer the entire contents of each card to your hddrive. A good system for handling this data will consist of a method for you to track the data by reel pair and eye. Keep in mind that the naming conventions used by the file system when the files are being written will not contain this information in a word-form, so you will want to take some care to keep your stereo video clips well organized.



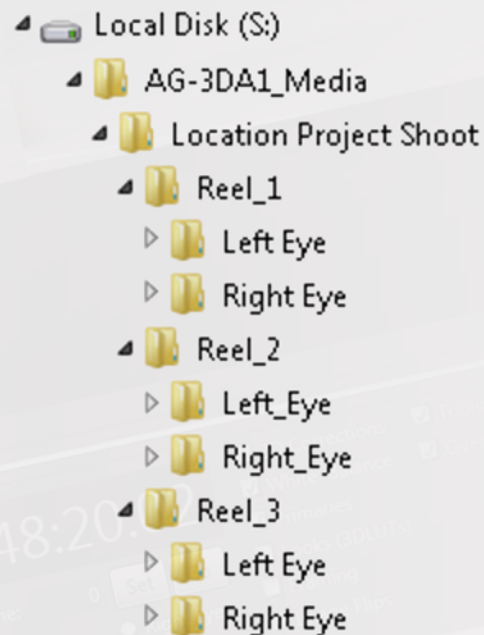
*You might want to consider labeling your SDHC media pairs by eye and reel # for efficient media management on location.

A Possible Approach:

User-Created Directory Structure

The directory you transfer to your computer from each SDHC card must maintain its structure and naming to function properly. However, that file directory can be transferred into a new directory intact.

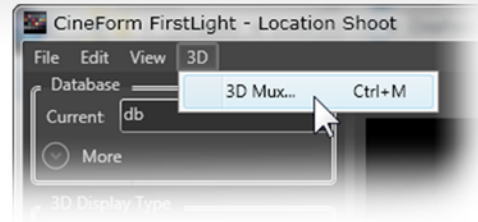
Creating a directory structure on your hddrive that gives you an immediate destination for the transfer of your video data, and keeps your SDHC card data paired properly by reel (or whatever designation you want to give to each media pair), and clearly identified by right/left eye, will streamline your post production.



(continued next page)

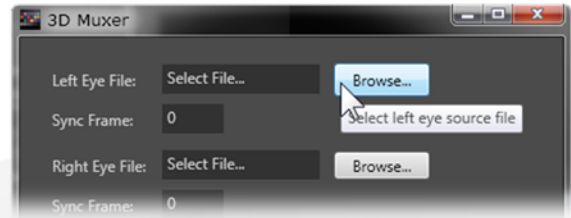
Launch CineForm First Light

When you launch First Light, you can start with an empty project, or open an existing First Light project. In the '3D' pull down menu, click on **'3D Mux'** (or simply type **Ctrl+M**).



Define file paths for left and right eye media.

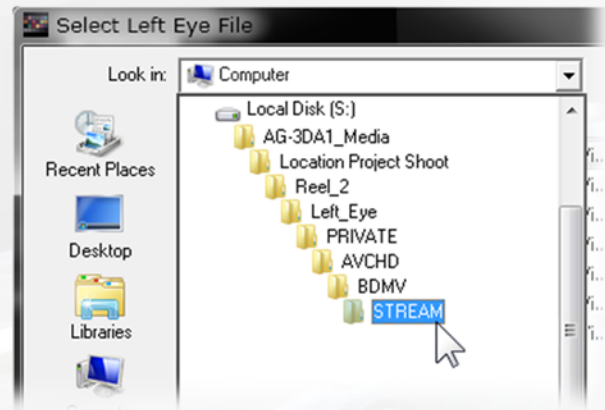
When the 3D Muxer dialog opens, you will see that there are two file paths to identify, one each for the left eye directory, and one for the right.



Browse to your transferred video files.

To select the left eye file, click on **'Browse'** and navigate to the directory where you saved the left eye files you wish to mux.

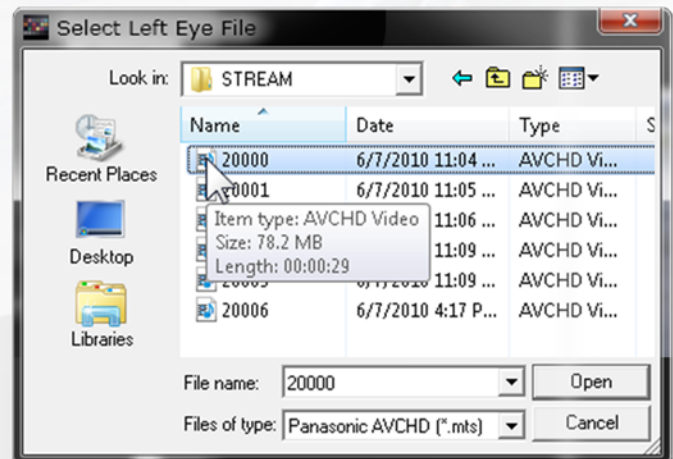
Inside the file structure of the transferred AVCHD media, navigate down to the 'Stream' directory as shown in the file hierarchy illustrated here.



Pick the first alphabetical file in the 'Stream' directory.

When you open the 'Stream' directory, you only need to click on the first file in the directory (when organized alphanumerically). First Light will look at all succeeding files in the directory automatically.

If you do not see files displayed in the 'Stream' directory, verify that the **"Files of type:"** text field indicates Panasonic AVCHD (*.mts).



...continue by clicking 'Browse' to designate the corresponding first file in the appropriate Right Eye File directory.

(continued next page)



Designate a 'Destination' directory and file name

After choosing the left and right eye source files, you can '**Browse**' to select a destination directory for the converted CineForm stereo files. You will need to designate a filename for the first target file, each subsequent file will use that name, appended by a number.

MuxSettings

Click on the '**Settings**' button to bring up the **MuxSettings** dialog.

In the top section you'll notice the options to choose the appropriate file wrapper, .AVI or MOV, as appropriate for your editing system. You also have the option to define a destination directory or change it.

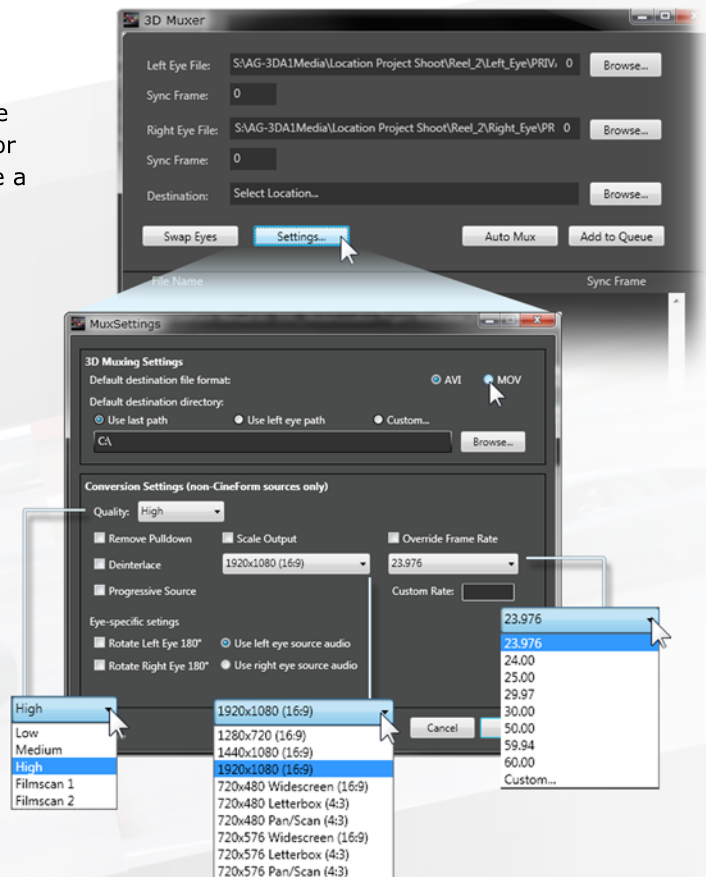
Conversion Settings

The '**Conversion Settings**' section gives you control over the transcode process, which will convert your left and right eye SDHC files to muxed stereo CineForm files. (If you are muxing two CineForm files without transcoding, these settings would not apply.)

When you set your '**Quality**' level, keep in mind that even CineForm Medium has excellent image quality for many HD workflows. Each quality level up adds image quality for higher end applications, but at the cost of additional filesize and computing power.

You have the option to deinterlace or remove the pulldown from non-progressive sources, as well as rotate individual eyes during the conversion as would be appropriate for your camera rig configuration.

After you've chosen the parameters for your target file, including which eye's shot will contribute the audio to the clip, click on '**OK**'.



(continued next page)



Processing the Queue

Select 'Auto Mux'

After verifying the source and destination directories are correct, clicking **'Auto Mux'** will automatically transfer each clip pair in the source directories to the queue as individual events.

(**'Add to Queue'** will queue the clip pair identified in the left and right eye text fields, but will not queue the entire directory contents.)

Queue additional directories

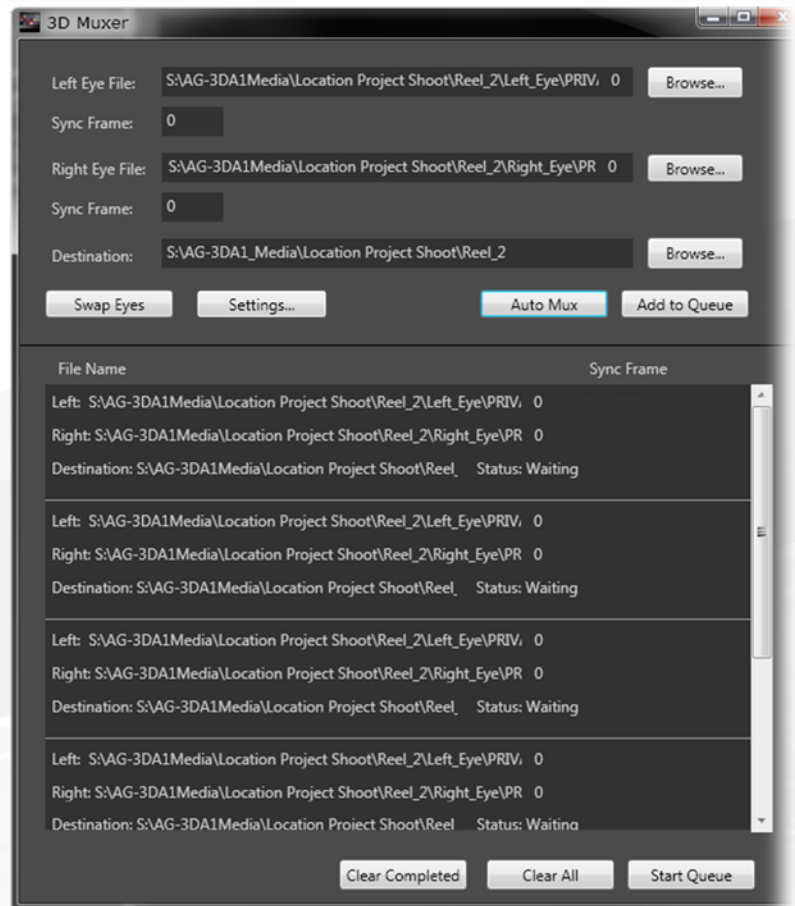
You'll notice that when you select **'Auto Mux'**, the source and destination fields clear in the top of the dialog. After one set of clips is moved to the queue, you can designate another set of source media and corresponding destination target name and directory, setting a large number of media conversions to complete in one session.

If you should need to exchange the right and left eye before the muxing operation, you can use the **'Swap Eyes'** button to exchange the left and right eye source files.

Click on 'Start Queue'

When all the clips you wish to convert are ready, clicking on **'Start Queue'** begins the conversion process. Each clip will show a 'Waiting' status until they begin the conversion process. While converting, there will be a percentage of completion displayed in status, and finished clips will show 'Status: Complete'.

Use the **'Clear Completed'** button to clear the queue of clips that are finished converting, and the **'Clear All'** button to clear all designated conversion events and start with an empty queue.



...when your media is converted, it's ready to be loaded into First Light, and on through your editing and post production software applications.



APPENDIX

CineForm First Light Framing Adjustments

Framing Adjustments using the crop function

16:9 Original



4:3 Crop



3:2 Crop



1.85:1 Crop



2.39:1 Crop



Planning a Post Production Project

Using CineForm's First Light to your best advantage for any given project will be made easier if you start the project by considering the overall workflow. The following is a list of possible factors you may want to consider.

1. Is there color metadata coming in with the footage, or will there be any information supplied?

- a. A director and/or a DP may want to generate some aesthetic information to communicate to post personnel what they originally had in mind when shooting.
 - If they are planning to do this after field acquisition is complete, will they need access to clips? Proxies? Still frame grabs for use in Iridas Onset to create .Look files?
 - Will they use First Light at some other location and send you data? Will they send LUTs or databases?
- b. Many cameras or digital video recording equipment can store color aesthetic information in the field.
 - Will the footage be coming in with LUTs applied?
 - Will they come separately?
 - What filetype and resolution?
- c. If there will be LUTs for each scene given to you, try to get a clear understanding of the naming convention...or suggest one.
 - Try to keep naming conventions based on script structure to streamline communication through post
 - Decide whether it makes more sense to keep this information in the form of LUTs, or through CineForm Metadata Database(s)

2. What kind of project is it?

- a. A long-form project (particularly a feature-length project with a storytelling aesthetic in this context) may have many scenes in different locations at different times of day, etc.
- b. Will you want to subdivide your primary adjustments in First Light by scene? By location? The presence of a key character?
- c. How will you construct First Light projects and clip libraries?
- d. How might you be able to stay organized and also increase efficiency by designating particular CineForm Metadata Databases for particular parts of the project?

3. How much media is involved? How do you handle it practically?

- a. If it's a big project, moving media around between many locations, or even office to office may be impractical.
- b. How could the workflow be subdivided so that the process is as streamlined as possible? Can color info be generated by a colorist or other post crew and sent to the editor's work station while the editor continues to cut?
- c. Will you grade a representative shot from each scene initially...possibly for a draft edit... then go in and make finer adjustments?

4. What software/hardware will be involved in the process when you account for every step?

- a. How are you handling any incoming color decision information?
- b. Are you leaving a CineForm workflow at some point? (perhaps to finish on a different system?)
- c. How is color information best carried forward? "Baked" in? LUT?
- d. If you are sending color decision info forward as LUTs, will they applied per scene? Per shot?
- e. Perhaps you'll correct with a LUT turned on in First Light, then turn it off and save it separately for application at a later stage on other equipment?