

Color workflows for mixing LogC3 and LogC4 Sample Projects

WORKFLOW GUIDELINE

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Version History

Version	Author	Change Note
2022-08-30	Simon Duschl	Added Chapters and Screenshots
2022-08-30	Florian Martin "Utsi"	Added Resolve Projects
2022-09-01	Simon Duschl	Added Filmlight Workflows
2022-09-15	Simon Duschl	Link for LUT packages
2022-09-20	Simon Duschl	Updated chapter 2.1.2
2023-06-21	Simon Duschl	Add "Decode as LogC4" option for LogC3

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1 Introduction

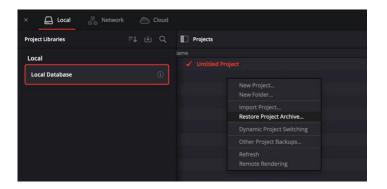
This workflow guideline will help you mix LogC3 and LogC4 footage within a single project. This guide references a number of different color grading tools and contains options for different workflows, e.g. color managed workflows or REVEAL Color Science workflows. It provides the project settings required, and sample projects files and footage are available as downloads at the end of this document.

2 Color workflows for mixing LogC3 and LogC4

There are different chapters for different color grading tools available in this section. Currently you will find sample projects and corresponding settings for Blackmagic Resolve Studio and Filmlight Baselight.

2.1 Blackmagic Resolve Studio

Since the release of Blackmagic Resolve Studio Version 18.0.1 it's now possible to work natively with LogC4 footage from our ARRI ALEXA 35 camera. To import the sample project files, please open the Resolve project manager > right-click and select "Restore Project Archive". Select and import the corresponding *.dra project archive. Please find the sample project files under the chapter "Download" within this document.



2.1.1 Non-color managed workflows in REVEAL Color Science

Please find the sample project file under "Downloads" section within this document.

Please note:

With introduction of DaVinci Resolve Studio 18.5 it is now possible to debayer ARRIRAW footage from LogC3/AWG3 based ARRI Cameras into the new REVEAL Color Science (LogC4/AWG4)

As another alternative you can use our <u>ARRI Reference Tool</u> to convert ALEXA Mini LF & ALEXA LF ARRIRAW footage to LogC4 ProRes4444XQ. This intermediate format needs to be tagged manually in DaVinci Resolve Studio as LogC4.

For a Resolve Non-color managed workflow in REVEAL Color Science working space, your project settings should match these settings:

DaVinci YRGB ARRI LogC4

- Project Settings | Color Management
 - Color science:
 - Timeline color space:
 - Output color space:
- Lookup Tables:
 - Video monitor lookup table: <u>65.cube</u>

Rec. 709-A (valid for macOS)

ARRI LogC4-to-gamma24 Rec709-D65 v1-

	Color Space & Transforms		
Master Settings	Color science	DaVinci YRGB	
Image Scaling	Timeline color space	ARRI LogC4	
Color Management	Output color space	Rec.709-A	
General Options			

No LUT selected		
No LUT selected		
ARRI_LogC4-to-gamma24_Rec709-D65_v1-65		
Use video monitoring selection		
Use video monitoring selection		
Tetrahedral		
Update Lists		
Open LUT Folder		
	No LUT selected ARRI_LogC4-to-gamma24_Rec709-D65_v1-65 Use video monitoring selection Use video monitoring selection Tetrahedral Update Lists	No LUT selected ~ ARRI_LogC4-to-gamma24_Rec709-D65_v1-65 ~ Use video monitoring selection ~ Use video monitoring selection ~ Use video monitoring selection ~ Use video to monitoring selection ~ Use video to monitoring selection ~ Use video to monitoring selection ~ Update Lists ~

In addition to this project settings the LogC3 / AWG3 footage from an Log3 / AWG3 based ARRI camera e.g. ALEXA Mini LF can now be debayered in the Camera Raw clip or project settings within DaVinci Resolve Studio. You have two possibilities to activate this option within DaVinci Resolve Studio:

• Toggle on the option "Decode as LogC4" to get REVEAL color science in the Camera Raw clip settings for each clip

Camera Raw					
Decode Quality	Use project setting		Color Temp	•	5160
Decode Using	Clip			•	-2.10
Lift		0.00	Exposure		 800
	•	0.00	Sharpness	•	0.00
Contrast	•	0.00	Highlights		 0.00
	Decode as monoch				
	Decode as LogC4				

• Toggle on the option "Decode as LogC4" to get REVEAL color science in the global Camera Raw project settings

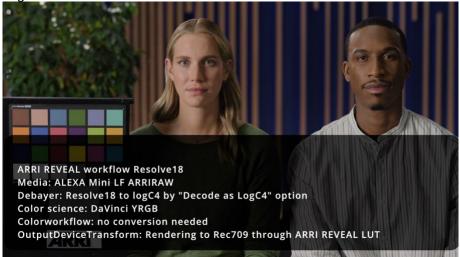
Master Settings	Master		
Image Scaling	RAW profile	ARRI V	
Color Management	Decode quality	Full res.	
General Options	Decode using	Project V	
Camera Raw		Import media at open gate resolution	
Capture and Playback		Reset Revert	
Subtitles and Transcription			
Fairlight	Project Settings		
-		•	0.00
Path Mapping		•	0.00
	Contrast	•	0.00
		•	0.00
	Highlights	•	0.00
	Shadows	•	0.00
	Color boost	•	0.00
		•	0.00
	Midtone detail	•	0.00
		Decode as monochrome	
		✓ Decode as LogC4	
	Use Camera Metadata		
	Color temp		
	✓ Tint		
	 Exposure 		
		•	100.00
	Finetune green	•	100.00
	Finetune blue	•	50.00

Your clips should result in following settings:

ALEXA 35 ARRIRAW debayer to LogC4 / ARRI Wide Gamut 4 with color workflow in REVEAL Color



 ALEXA Mini LF ARRIRAW directly debayered to LogC4 / ARRI Wide Gamut 4 with "Decode as LogC4"



 ALEXA Mini LF ARRIRAW LogC3 to LogC4 debayer with ARRI Reference Tool to ProRes4444XQ LogC4 / ARRI Wide Gamut 4



2.1.2 Color managed workflow in REVEAL Color Science

Please find the sample project file under "<u>Downloads</u>" within this document.

Working with this color managed workflow results in an oversaturated and generally incorrect image in the Resolve Studio GUI "Viewer/Monitor". However, the monitoring path (e.g. SDI output) will be processed correctly and can be used for viewing. This behavior depends on whether the option "Use mac display color profiles for viewer" is selected or not. Correctly this is turned on for macOS systems.

General			
	System		
	General Preferences		
		✓ Use 10-bit precision in viewers if available	
		Use Mac display color profiles for viewers	
		 Automatically tag Rec.709 Scene clips as Rec.709-A 	
		 Automatically check for updates 	
General			
	LUT Locations		
	LUT Locations		

Please note:

With introduction of DaVinci Resolve Studio 18.5 it is now possible to debayer ARRIRAW footage from LogC3 / AWG3 based ARRI Cameras into the new REVEAL Color Science (LogC4 / AWG4)

As another alternative you can use our <u>ARRI Reference Tool</u> to convert ALEXA Mini LF & ALEXA LF ARRIRAW footage to LogC4 ProRes4444XQ. This intermediate format needs to be tagged manually in DaVinci Resolve Studio as LogC4.

For a Resolve color managed workflow in REVEAL Color Science working space, your project settings should match these settings:

- Project Settings | Color Management
 - Color science: DaVinci YRGB Color Managed
 - [] Automatic color management (OFF)
 - Color processing mode: Custom 0 Input color space: ARRI LogC4 0 Timeline color space: ARRI LogC4 0 HDR 1000 Timeline working luminance: 0 Output color space: Same as Timeline 0 Limit output gamut to: Output color space 0 Input DRT: None 0 Output DRT: None 0
 - [X] Use inverse DRT for SDR to HDR conversion (YES)
 - [X] Use white point adaption (YES)
 - [X] Use color space aware grading tools (YES)
 - Apply resize transformations in: Gamma
 - Graphics white level: 100 nits (can also be any other nit level)
 - [X] HDR mastering is for 1000 nits
- Loopup Tables:
 - Video monitor lookup table:
 ARRI LogC4-to-gamma24 Rec709-D65 v1

 65.cube
 65.cube

Project Settings: Resolve18_mixed_footage_logC3_and_logC4_ARRI_REVEAL_ColorScience					
Presets	Color Space & Transforms				
Master Settings	Color science	DaVinci YRGB Color Managed			
Image Scaling		Automatic color management			
Color Management	Color processing mode	Custom			
General Options	Input color space	ARRI LogC4			
Camera RAW	Timeline color space	ARRI LogC4			
Capture and Playback	Timeline working luminance	HDR 1000 V			
Subtitles	Output color space	Same as Timeline			
Fairlight	Limit output gamut to	Output color space			
Path Mapping	Input DRT	None			
rati Mapping	Output DRT	None			
		 Use white point adaptation 			
		 Use color space aware grading tools 			
	Apply resize transformations in	Gamma			
	Graphics white level	100 nits			
		✓ HDR mastering is for 1000 nits			

Lookup Tables

No LUT selected		
No LUT selected		
ARRI_LogC4-to-gamma24_Rec709-D65_v1-65		
Use video monitoring selection		
Use video monitoring selection		
Tetrahedral		
Update Lists		
Open LUT Folder		
	No LUT selected ARRI_LogC4-to-gamma24_Rec709-D65_v1-65 Use video monitoring selection Use video monitoring selection Tetrahedral Update Lists	No LUT selected × ARRI_LogC4-to-gamma24_Rec709-D65_v1-65 × Use video monitoring selection × Use video monitoring selection × Use video monitoring selection × Update Lists ×

Your clips should result in following settings:

ALEXA 35 ARRIRAW debayer to LogC4 / ARRI Wide Gamut 4 with color workflow in REVEAL Color



 ALEXA Mini LF ARRIRAW directly debayered to LogC4 / ARRI Wide Gamut 4 with "Decode as LogC4"



 ALEXA Mini LF ARRIRAW LogC3 to LogC4 debayer with ARRI Reference Tool to ProRes4444XQ LogC4 / ARRI Wide Gamut 4



2.1.3 Color managed workflow in DaVinci WG/Intermediate

Please find the sample project file under "Downloads" section within this document.

For a Resolve color managed workflow in DaVinci WG/Intermediate working space, your project settings should match these settings:

Custom

ARRI LogC4

HDR 1000

• Project Settings | Color Management

Color science:

0

DaVinci YRGB Color Managed

DaVinci WG/Intermediate

Output color space

Rec. 709 Gamma 2.4 (can also be any other color space)

- [] Automatic color management (OFF)
- Color processing mode:
- Input color space:
- Timeline color space:
- Timeline working luminance:
- Output color space:
- Limit output gamut to:
- Input DRT: DaVinci
- Output DRT: DaVinci
- o [X] Use inverse DRT for SDR to HDR conversion (YES)
- [X] Use white point adaption (YES)
- \circ [X] Use color space aware grading tools (YES)
- Apply resize transformations in: Gamma
- Graphics white level:
- 100 nits (can also be any other nit level)

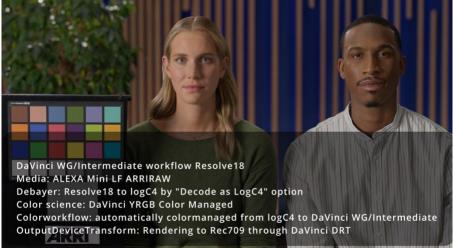
Project Settings: Resolve18_mixed_footage_logC3_and_logC4_DaVinciWGIntermediate				
Presets	Color Space & Transforms			
Master Settings	Color science	DaVinci YRGB Color Managed		
Image Scaling		Automatic color management		
Color Management	Color processing mode	Custom		
General Options	Input color space	ARRI LogC4		
Camera RAW	Timeline color space	DaVinci WG/Intermediate		
Capture and Playback	Timeline working luminance	HDR 1000 V		
Subtitles	Output color space	Rec.709 Gamma 2.4		
Fairlight	Limit output gamut to	Output color space		
Path Mapping	Input DRT	DaVinci		
Fatt Mapping	Output DRT	DaVinci		
		✓ Use inverse DRT for SDR to HDR conversion		
		 Use white point adaptation 		
		 Use color space aware grading tools 		
	Apply resize transformations in	Gamma		
		100 nits		

Your clips should result in following settings:

 ALEXA 35 ARRIRAW debayer to LogC4 / ARRI Wide Gamut 4 with color workflow in DaVinci WG/Intermediate



 ALEXA Mini LF ARRIRAW directly debayered to LogC4 / ARRI Wide Gamut 4 with "Decode as LogC4"



2.1.4 Color workflow in ACES

Please find the sample project file under "Downloads" section within this document.

For a color workflow in ACES working space, your project settings should match these settings:

• Project Settings | Color Management

0	Color science:	ACEScct
0	ACES version:	ACES 1.3
0	ACES Input Transform:	ARRI LogC4
0	[X] Apply ACES reference gamut comp	press (ON)
0	ACES Output Transform:	Rec709 (can also be any other color space)

- Process node LUTs in: ACEScc AP1 timeline space
- [X] Use color space aware grading tools (ON)
- Apply resize transformations in: Timeline
- Graphics white level: 100 nits (can also be any other nit level)

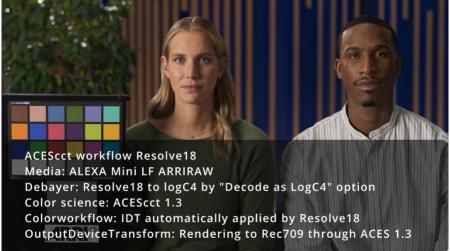
Project Settings: Resolve18_n	nixed_footage_logC3_and_logC4_ACES		
Presets	Color Space & Transforms		
Master Settings	Color science	ACEScct	
Image Scaling	ACES version	ACES 1.3	
Color Management	ACES Input Transform	ARRI LogC4	
General Options		 Apply ACES reference gamut compress 	
Camera RAW	ACES Output Transform	Rec.709	
Capture and Playback	Process node LUTs in	ACEScc AP1 timeline space	
Subtitles		 Use color space aware grading tools 	
Fairlight	Apply resize transformations in Graphics white level	Timeline	
Path Mapping			

Your clips should result in following settings:

• ALEXA 35 ARRIRAW debayer to LogC4 / ARRI Wide Gamut 4 with color workflow in ACES



 ALEXA Mini LF ARRIRAW directly debayered to LogC4 / ARRI Wide Gamut 4 with "Decode as LogC4"

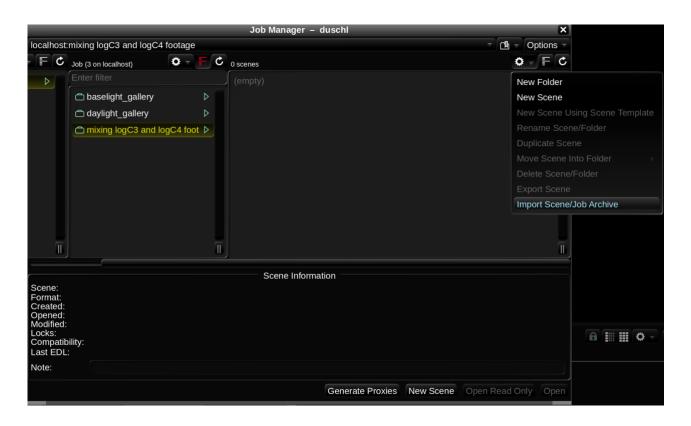


2.2 Filmlight Baselight

The public beta available for Filmlight Baselight (Version 5.3.17096 and later) is required to work natively with LogC4 footage from our ARRI ALEXA 35 camera.

Please ensure to get the offical <u>ARRI REVEAL DRT family from the Filmlight website</u>. Follow the instructions on the website to import the ARRI REVEAL DRT family correctly into Filmlight Daylight/Baselight.

In Filmlight "projects" are split up into "Jobs" and "Scenes". To import the sample projects, please open the job manger and create a new job. Select and import the *.bljob job file. Please find the *.bljob job file under the chapter "Downloads" within this document. In addition to the job file, please also download the revelant sample footage found in the download link and relink to project.





2.2.1 Color workflow in REVEAL Color Science

Please find the sample project and footage files under "Downloads" section within this document.

For a color workflow in Filmlight TLog/EGamut working space, your scene settings should match these settings:

- Scene Settings | Format & Colour
 - Colour
 - Working Colour Space:
 - Grade Result Colour Space:
 - Display Rendering Transform:
 - o Advanced
 - Default Input Colour Space:

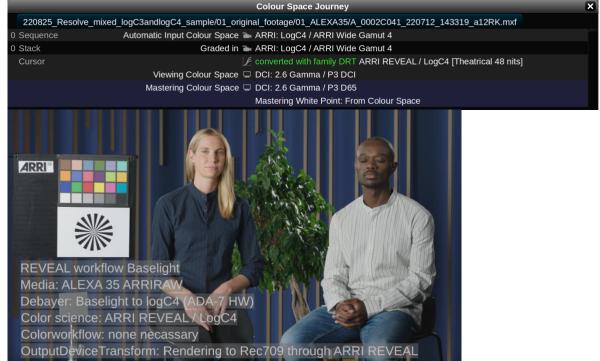
ARRI: LogC4 / ARRI Wide Gamut 4 From Stack ARRI REVEAL / LogC4

(Use Stack Colour Space) [X] Prefer Automatic

				Scene Settings			×
Settings fo	or localhost:mixi	ing logC3	and logC4	footage:Baselight_m	ixed_logC3_and_log0	C4_footag	e_REVEAL
General	Format & Colour	Stereo	Scene Audio	Default Image Transform	Container & Versioning	Metadata	Category Group
[Format			
	Working Format:	HD 1920x	1080 -				
Wo	orking Frame Rate:						
w	orking Field Order:	None (pro	gressive) –				
F	Processing Format:	Process In	n Viewing/Rend	er Format 🔻			
Sce	ne Format Update:	🔵 Auto U	pdate When Jo	b/Global Formats Change			
				Colour			
Worl	king Colour Space:	ARRI:	LogC4 / ARRI V	Vide Gamut 4			
Grade Re	suit Colour Space:	From S	Stack –				
Display Rei	ndering Transform:	ARRI F	REVEAL / LogC	4	Missing cube file ARRI_LogC4-to	o-gar ⊤ Aut	omatic –
				Advanced			
Default Ir	nput Colour Space:	(Use S	tack Colour Sp	ace) 🔻 🐚 Prefer Automa	tic/From Metadata		
	DRT Application:	🔾 Do not	apply DRT for	Display → Scene colour spa	ce conversions		
Maste	ring Colour Space:	Autom	atic From DRT				
Ma	astering Operation:	Set White	e & Clip				
Mas	tering White Point:						
				■ Dolby Vision			

Your "Colour Space Journey" should result in following settings:

• ALEXA 35 ARRIRAW debayer to LogC4 / ARRI Wide Gamut 4 with color workflow in ARRI Color



• ALEXA Mini LF debayer to Linear / ARRI Wide Gamut 3 with color workflow in REVEAL Color

	Colour Space Journey
220825_Resolve	_mixed_logC3andlogC4_sample/01_original_footage/02_ALEXA_MiniLF/L002C005_220712_ROM5.mxf
0 Sequence	Automatic Input Colour Space 🗃 ARRI: Linear / ARRI Wide Gamut 3
0	▼ converted
	Working Colour Space ` ARRI: LogC4 / ARRI Wide Gamut 4
0 Stack	Graded in 🖿 ARRI: LogC4 / ARRI Wide Gamut 4
Cursor	converted with family DRT ARRI REVEAL / LogC4 [Theatrical 48 nits]
	Viewing Colour Space 🖵 DCI: 2.6 Gamma / P3 DCI
	Mastering Colour Space 💷 DCI: 2.6 Gamma / P3 D65
	Mastering White Point: From Colour Space
ARRI	
REVEAL wo	orkflow Baselight
Media: ALE	XA Mini LF ARRIRAW
Debayer: Ba	aselight to logC3 (ADA-5 SW)
and the second s	ce: ARRI REVEAL / LogC4
the second se	ow: logC3 to logC4 through Baselight
OutputDevic	ceTransform: Rendering to Rec709 through ARRI REVEAL



ALEXA Mini LF debayer to LogC4 / ARRI Wide Gamut 4 with color workflow in REVEAL Color

Please note:

You must switch manually from LogC3 to LogC4 debayer in ARRIRAW settings.

2.2.2 Color workflow in Filmlight TLog/EGamut

Please find the sample project and footage files under "Downloads" section within this document.

For a color workflow in Filmlight TLog/EGamut working space, your scene settings should match these settings:

- Scene Settings | Format & Colour
 - Colour
 - Working Colour Space:
 - Grade Result Colour Space:
 - Display Rendering Transform:
 - o Advanced
 - Default Input Colour Space:

(Use Stack Colour Space) [X] Prefer Automatic

Filmlight: T-Log/E-Gamut

Truelight CAM v2 / Automatic

From Stack

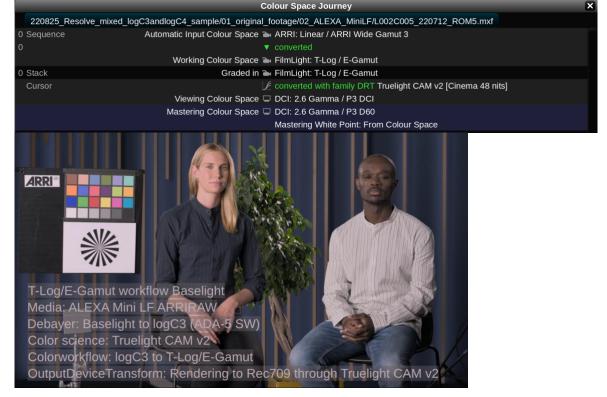
				Scene Settings			×
Settings fo	or localhost:mixi	ing logC	3 and logC4	footage:Baselight_mi	xed_logC3_and_log	C4_footag	e_TLog/EGamu -
General	Format & Colour	Stereo	Scene Audio	Default Image Transform	Container & Versioning	Metadata	Category Group
[Format			
	Working Format:	HD 1920	x1080 -				
w	orking Frame Rate:						
w	orking Field Order:	None (pr	ogressive) –				
Processing Format:		Process	In Viewing/Rend	ler Format 🔻			
Sce	Scene Format Update: 🔘 Auto Update When Job/Global Formats Change						
				Colour			
Wor	king Colour Space:	🗃 FilmLight: T-Log / E-Gamut 🔫					
Grade Re	esult Colour Space:	From	Stack				
Display Re	ndering Transform:	🗜 Trueli	ght CAM v2	Automatic			
				Advanced			
Default Ir	nput Colour Space:	(Use s	Stack Colour Sp	ace) 🔻 🐚 Prefer Automat	tic/From Metadata		
	DRT Application:	🔵 Do no	t apply DRT for	Display → Scene colour spac	ce conversions		
Maste	ring Colour Space:	Auton	natic From DRT				
Ma	astering Operation:	Set Whit	e & Clip				
Mas	stering White Point:						
				Dolby Vision			

Your "Colour Space Journey" should result in following settings:

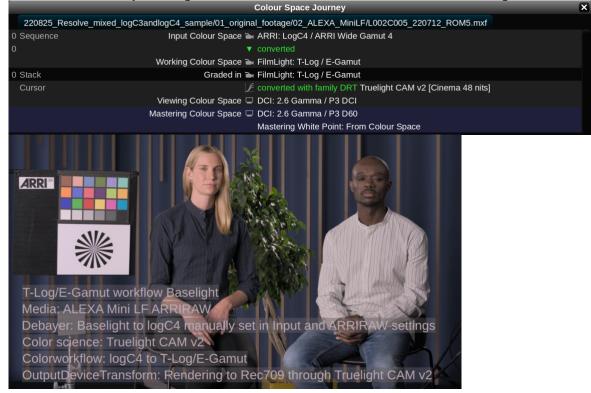
 ALEXA 35 ARRIRAW debayer to LogC4 / ARRI Wide Gamut 4 with color workflow in T-Log/E-Gamut



ALEXA Mini LF debayer to Linear / ARRI Wide Gamut 3 with color workflow in T-Log/E-Gamut



ALEXA Mini LF debayer to LogC4 / ARRI Wide Gamut 4 with color workflow in T-Log/E-Gamut



Please note:

You must switch manually from LogC3 to LogC4 debayer in ARRIRAW settings.

2.2.3 Color workflow in ACES

Please find the sample project and footage files under "Downloads" section within this document.

For a color workflow in ACES working space, your scene settings should match these settings:

- Scene Settings | Format & Colour
 - Colour
 - Working Colour Space:
 - Grade Result Colour Space:
 - Display Rendering Transform:
 - Advanced
 - Default Input Colour Space:

(Use Stack Colour Space) [X] Prefer Automatic

ACEScct: ACEScct/AP1

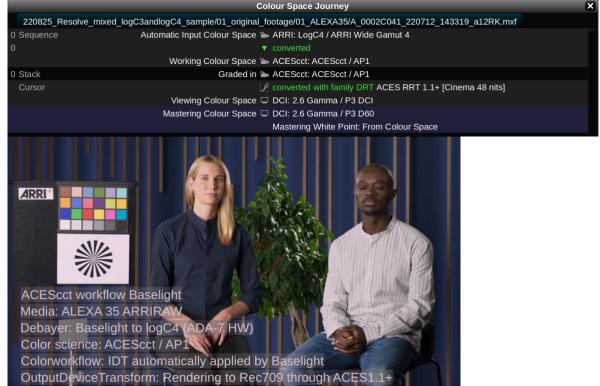
ACES RRT 1.1+ / Automatic

From Stack

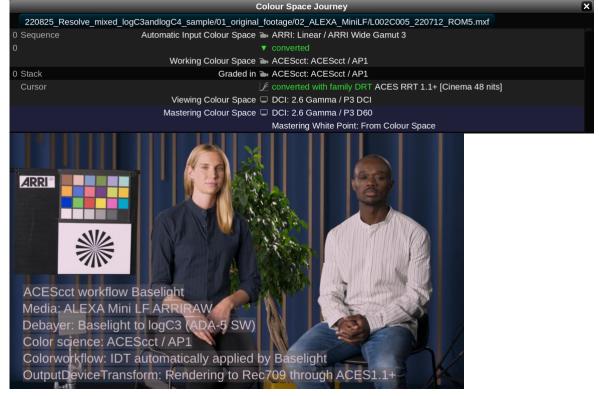
_		_	_	Scene Settings			
ettings fo	r localhost:mixi	ng logC	3 and logC4	footage:Baselight_mix	xed_logC3_and	_logC4_footage	e_ACES
General	Format & Colour	Stereo	Scene Audio	Default Image Transform	Container & Versie	oning Metadata	Category Group
				Format			
Working Format:		HD 1920	x1080 🔻				
Working Frame Rate:							
Working Field Order:		None (pr	ogressive) –				
Processing Format:		Process	n Viewing/Rend	der Format 🔻			
	0						
Scei	ne Format Update:		Jpdate When Jo	b/Global Formats Change			
				Colour			
Working Colour Space:		ACES	cct: ACEScct / A	AP1			
Grade Result Colour Space:		From	Stack				
isplay Rei	ndering Transform:	ACES	RRT 1.1+	Automatic			
				Advanced			
Default In	put Colour Space:	(Use s	Stack Colour Sp	ace)		Prefer Automatic	/From Metadata
DRT Application:		\bigcirc Do not apply DRT for Display $\ensuremath{\rightarrow}$ Scene colour space conversions			e conversions		
Maste	ring Colour Space:	Autom	natic From DRT				
Ma	astering Operation:	Set Whit	e & Clip				
Mas	tering White Point:						
				Delby Vision			

Your "Colour Space Journey" should result in followin settings:

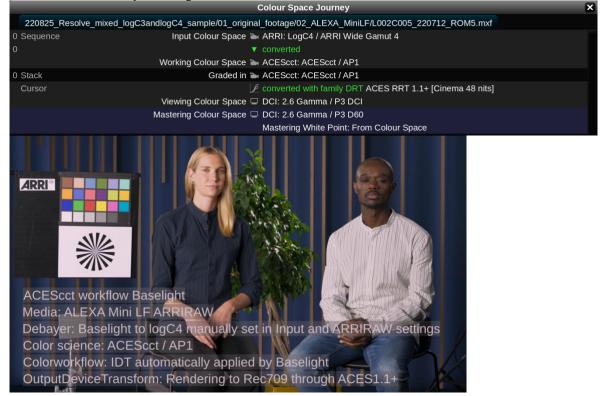
ALEXA 35 ARRIRAW debayer to LogC4 / ARRI Wide Gamut 4 with color workflow in ACEScct/AP1



ALEXA Mini LF debayer to Linear / ARRI Wide Gamut 3 with color workflow in ACEScct/AP1



• ALEXA Mini LF debayer to LogC4 / ARRI Wide Gamut 4 with color workflow in ACEScct/AP1



Please note:

You must switch manually from LogC3 to LogC4 debayer in ARRIRAW settings.

3 Downloads

You will find the corresponding project files (e.g. Resolve Studio or Filmlight Baselight/Daylight job file) and ARRIRAW sample files here under this download link.

The sample projects are packed into a *.tar file and need to be extracted. Please relink the footage contained in the *.tar to your project.

- Blackmagice Resolve Studio (Version 18.5) project archives incl. footage:
 - o None-color managed workflow in REVEAL Color Science
 - o Color managed workflow in REVEAL Color Science
 - o Color managed workflow in DaVinci WG/Intermediate
 - Color workflow in ACES
- Filmlight Baselight/Daylight (Version 5.3.17096) job file incl. footage:
 - o Color workflow in REVEAL Color Science
 - o Color workflow in T-Log/E-Gamut
 - Color workflow in ACES
- ARRI LogC4 LUT Package

4 Contact

In case you have questions or recommendations, please contact the Digital Workflow Solutions group within ARRI via email: <u>digitalworkflow@arri.de</u>