ALEXA 35
Getting started with Workflow & Post

GUIDELINE

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1   Introduction

This document gives you a brief workflow overview on how to work with ALEXA 35. We will update this document from time to time and later add additional information to our website in the Learn & Help section.

2   Major changes in the ARRI ALEXA 35

2.1   Technical updates & specifications

With the ARRI ALEXA 35 we introduce a completely new sensor with a physical S35 size of 27.99 x 19.22 mm / 1.102 x 0.757", ⌀ 33.96 mm, 4608 x 3163 photosites and a significantly increased dynamic range.

2.2   MXF container & metadata

We also introduce a new MXF wrapper and metadata format that is used for both MXF/ARRIRAW and MXF/Apple ProRes files. The technical specs regarding the metadata are available publicly in SMPTE RDD 54 and SMPTE RDD 55. All metadata is stored in each file header automatically. There's no exception or limitation.

2.3   File & Reel Naming

ALEXA 35 introduces a new and extended file naming to cater needs of productions we've gathered in feedback over the years. The new naming provides 704 different options to set a Camera Index, 9999 reels and 999 clips. In addition, an extended time stamp has been added as well as a "Codec Identifier" to differentiate MXF/ARRIRAW and MXF/ProRes already on a file system base:

New Reel Name (= folder name on the media)
The reel name follows the known scheme and consists of camera index, reel counter and camera serial number.

2.4 ARRI Textures

To further open the creative possibilities within the ALEV4 sensor we have created "ARRI Textures". A texture changes a set of parameters that directly influences the image. Among those are e.g., grain-structure, sharpness, and others which in combination work like a film stock.

ARRI Textures are offered as presets right in-camera and are not user editable.

ARRI Textures are a destructive feature and cannot be altered afterwards! This applies to both ARRIRAW and ProRes.

The texture "K445 default" is the default texture of ALEXA 35. Choose that texture (pre-chosen as factory reset setting) when you're shooting with other ARRI ALEXA or AMIRA cameras simultaneously or simply if you do not want to use the ARRI Textures feature.

Please see the separate document "ARRI Textures" for in-depth information and sample images.

2.5 New image science and Log C

Aside from the new sensor, one of the biggest advances introduced with the ARRI ALEXA 35 is the new image science "REVEAL", including a number of new and updated image processing steps. Two of these steps are the new ARRI Wide Gamut (AWG4) color space and the new LogC4 tonal curve. The new ARRI LogC4 tonal curve has the capability to encode the increased dynamic range of the new sensor.

REVEAL is backwards compatible for ARRIRAW footage from ALEXA or AMIRA cameras.

2.6 ARRI Wide Gamut 4

The AWG4 colorspace has been optimized to suit the needs of the ALEV4 sensor. It is bigger than Rec 2020 but in the same moment not too big to reduce or avoid virtual colors.
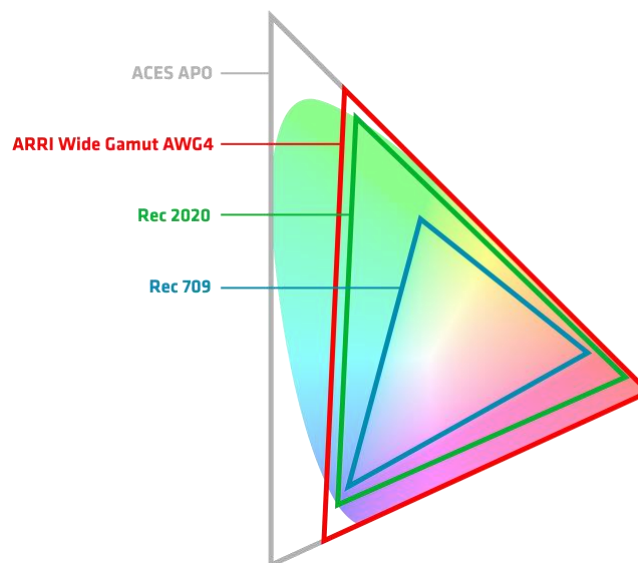
2.7   LogC4

Adding more dynamic range to a sensor means dealing with "more image information" to fit into the existing pipelines. To accommodate the data from ALEV4 it was necessary to create a new tonal curve, the LogC4 curve.

At first sight a LogC4 images is darker than a likewise well exposed LogC3 image:

LogC4 is very different from LogC3 (the Log C you are used to)! This calls for adaption when exposing the sensor as a single operator as well as for DITs who monitor exposure or do live grading. **LogC3 3D LUTs do NOT work with LogC4 and may lead to unwanted results!**

The nature of the new LogC4 curve is clearly visible once you plot it as a graph:
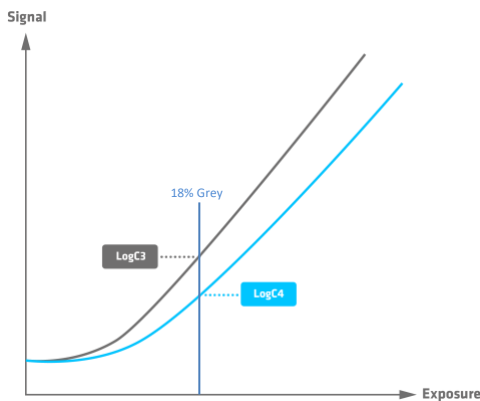
Mid gray in LogC4 sits at: 1140/4095 // 285/1023 // 28%. This is lower than the 39% of LogC3 because the greater dynamic range calls for more headroom for the additional stops.

3 Looks & 3D LUTs for LogC4

3.1 Looks on set

Look files are a popular tool to implement one's creative vision early on in production. REVEAL color science brings a new version of that to the camera: ARRI Look File 4 (ALF4). To make the look file more universal we've separated the color space transform from the creative look file:


That enables ALEXA 35 to output REC 709 (SDR) on SDI1 and e.g. REC 2100/PQ (HDR) on SDI2. The camera handles the color space transformation. Or in post production your tool of choice takes over that step.

ALEXA 35 ships with the ARRI Look Library in its new version "LogC4" pre-installed. That are all looks you're used to from ALEXA Mini and AMIRA adapted to LogC4.

Add looks to your "camera folder" like in ALEXA Mini or AMIRA.
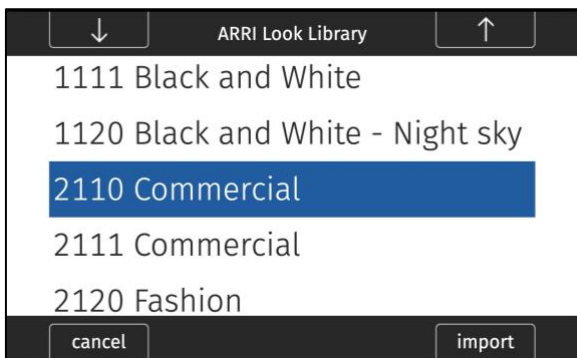
As a default, there is only one standard ALF4 look file available in camera, this is a straight pass-through/dummy without changes to the imge.

The Look Library used to come in three flavours for different strenghts, this has been replaced by an option in the camera to set the Look Intensity in 10% steps from 100% (= look fully applied) to 0% (= LogC4 image).

3.2 Manual Look Creation

Of course, ALF4s can be created manually as well. As you're used to from ALEXA cameras, your favourite tool will certainly support the new ALF4 workflow.

We will release a combined tool for Viewing, Rendering, Metadata and Look Files: the ARRI Reference Tool (ART). It will be compatible with ARRIRAW and Apple ProRes clips.

3.3   Using 3D LUTs

In case you are using an external life grading solution on set any looks will have to be created by outputting a LogC4 signal from the camera and feeding that into a LUT box or LUT-capable monitor, which <u>must</u> (also) use our new LogC4 color space transform 3D LUTs.

[The latest ARRI-offical 3D LUTs for ALEXA 35 can be found here.](#)
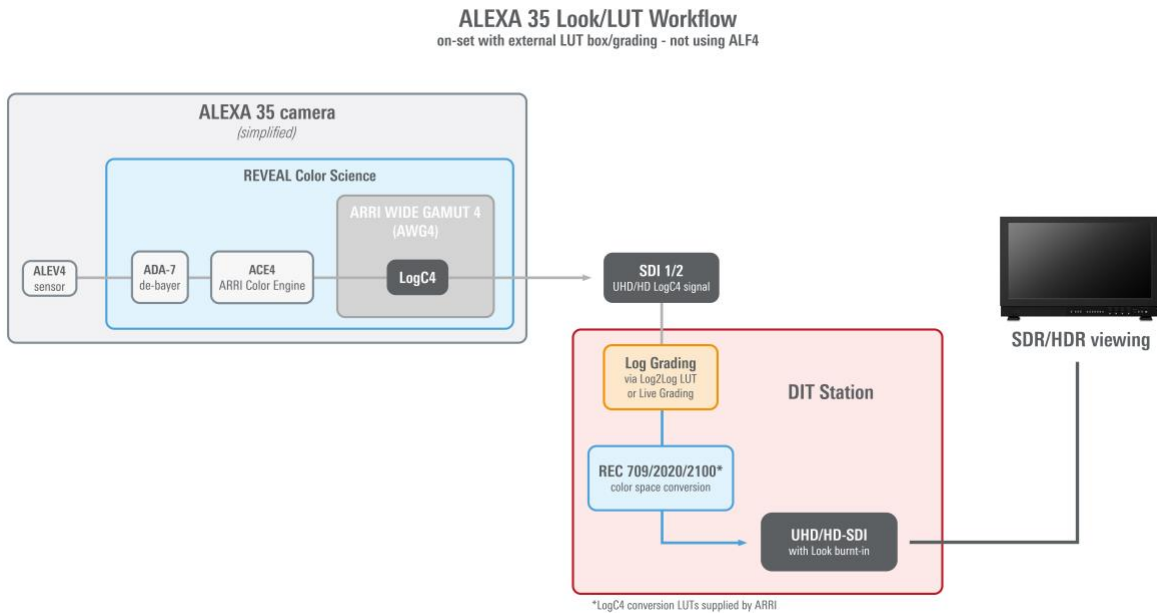
3.4   3D LUTs in post-production

For color grading ALEXA 35 footage it's also key to use our latest ARRI-offical 3D LUTs. This initial set of LUTs can be used in post production tools and software that support the *.cube LUT file format. We offer different 3D LUT files for all common color spaces e.g. Rec2020, St2084 or Rec709 Gamma 2.4.

[The latest ARRI-offical 3D LUTs for ALEXA 35 can be found here.](#)

Please note: It is <u>most important</u>, that all footage which has been captured with the ARRI ALEXA 35 must be processed by using new 3D LUTs that were especially developed for the new LogC4 tonal curve.

Older **3D LUTs that were used for ARRI LogC3** (e.g. for ALEXA, AMIRA, ALEXA Mini, ALEXA LF and ALEXA Mini LF) **should <u>not</u> be used for screening or post-production workflows together with ALEXA 35 footage**.

4   ARRI Tools

4.1   Frame Line & Lens Illumination Tool
[The FLLIT has been updated for ALEXA 35.](#)

4.2   Formats & Data Rate Calculator
[FDRC has been updated for ALEXA 35.](#)

5   3rd Party Support

We're supplying the new ARRIRAW SDK 7.0.0 to solution partners all around the industry to enable ALEXA 35 support in their tools. This is an ongoing process and we're keen to see live implementations when ALEXA 35 ships to the first customers.

6   Contact

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