Carl Zeiss Lenses

ZEISS XD Metadata Update

HPA 2020 Supersession

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End-to-end Workflow

ZEISS eXtended Data:

- Track all Lens Metadata including lens profiles (shading & distortion characteristics)
- Provide real-time information
- Apply information on-set or in post with free* tools
- based on the Cooke /i technology
- For Supreme Primes & CP.3 XD lenses

Creative Applications

- Visual Effects
- Virtual Production
- Stitching together of multiple cameras
- Volumetric and 3D

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Captured by Protocol

/i technology	ZEISS extended data
• Lens & manufacturer data (name, type, focal length, firmware version, etc …): helps sorting out clips based on the lens used. • Focusing distance (real-time with 1 mm precision) • T-stop value (real time with 1/10th T-stop precision) • Depth of field, entrance pupil position	• Lens distortion characteristics depending on focal point (real time) • Lens shading characteristics depending on focal point and effective T-stop These allow you to enhance the image quality

ZEISS will keep your lens up – to – date

eXtended Data technology is being constantly developed – new useful data will be integrated over time and can be included into lens via **firmware** update.

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Original Workflow

ZEISS eXtended Data Zero-Day:

1. Required the use of an external device
2. Record XD data in real-time
3. Use Pomfort LiveGrade for live data
4. Use Pomfort Silverstack for side-car
5. Pass data in side-car to post

ZEISS eXtended Data Resource:

- www.zeiss.com/cine/xd

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Latest Developments

ZEISS eXtended Data Updates:

1. RED DSMC2 in-camera recording of XD
2. Sony Venice in-camera recording of XD
3. Open EXR Injection Tool
4. New robust Nuke Plugin
5. Fuji announces XD implementation

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RED DSMC2 in-camera recording

No external boxes required:

1. Works on all DSMC2 cameras
2. Requires the latest camera firmware
3. Extract side-car files in Silverstack for Adobe After Effects & Nuke plugins.
4. No side-car files necessary for Open EXR image sequences that have been injected.

RED

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Sony Venice in-camera recording

No external boxes required:

1. Announced for Firmware Ver 4.0
2. Software implementation pending – coming Summer 2019
3. Extract side-car files in Silverstack for Adobe After Effects plugin.
4. No side-car files necessary for Open EXR image sequences that have been injected.

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Open EXR Injection Tool

True to VFX Workflow:

1. Use EDL to create Open EXR image sequences for VFX vendor
2. Inject XD Lens Data into each image based on clip name and timecode
3. Use free Nuke plugin to see data
4. Injection tool is a command line software
5. Beta implementation for Colorfront transcoding active
6. Soon to be implemented in Baselight transcoding, Resolve, etc.
7. Tested by EFilm

New Foundry Nuke Plugin

Robust Features:

1. Video clip and data can be used on separate nodes
2. Un-apply and re-apply lens characteristics on any layer or node
3. Apply lens characteristics to foreground or background (greenscreen) separately.
4. No side-car files necessary for Nuke plugin. Works with certain camera originals.

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Fuji Premista Zoom Lenses

Will feature ZEISS XD technology:

1. Same implementation of data as ZEISS XD capable lenses
2. Same end-to-end workflow possible
3. Use Pomfort Software for ZEISS XD
4. Use free ZEISS plugins for Post
5. No new investment needed

FUJINON

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The Future of Lens Data

Other non-VFX applications:

1. Virtual production – no need to profile lenses for motion-capture rigs
2. 3D – More accurate left/right eye data
3. Volumetric capture – easy stitching of all camera angles to capture performance in 3D
4. Large Screen applications – stich multiple cameras together to form a large image