



ICVFX Workflow Guide: 2D Plate Playback Using Pixera

Executive Summary:

This guide provides detailed instructions for capturing, grading, delivering, and playing back 2D plate footage for virtual production using Pixera. It also covers essential procedures for calibrating LED walls to achieve accurate color representation and optimal luminance, ensuring seamless integration into virtual production workflows.

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1. 📹 Recording 2D Plate Footage

🎥 Equipment & Camera Settings

- **Camera Recommendations:** Use cinema-grade cameras capable of recording in at least 8K resolution for maximum flexibility in post-production.
- **Frame Rates:** Standard cinematic frame rates (24fps, 30fps, or 60fps) to match virtual production standards.
- **Shutter Speed:** Use a shutter angle of 180° (1/48s at 24fps) to ensure motion blur consistency.
- **Exposure & ISO:** Expose footage to the right (ETTR) to maximize dynamic range while avoiding highlight clipping.
- **Color Profile:** Record in log (e.g., S-Log3, N-Log) or RAW format for maximum dynamic range and color grading flexibility.

2. 📺 Color Grading & Footage Delivery

📺 Color Grading Workflow

- **Software Recommendations:** DaVinci Resolve preferred for its precise color management and control.
- **Color Space Management:**
 - Input: Camera-native log (S-Log3, N-Log)
 - Working: ACEScg or DaVinci Wide Gamut Intermediate
 - Output: Rec.709 Gamma 2.4 (SDR) or PQ ST2084 (HDR)
- **Grading Monitor Calibration:** Calibrate grading monitors regularly to Rec.709 and HDR PQ standards using industry-standard probes and software (e.g., CalMAN, LightSpace).
- **Luminance Targets:**
 - SDR (Rec.709): 100 nits peak
 - HDR (PQ): Typically 1000 nits peak

📺 Delivery Specifications

- **Resolution:** Minimum 4K UHD, ideally 8K for detailed plate playback.
- **Codec:** ProRes 4444 or DNxHR HQX for minimal compression artifacts.
- **Bit Depth:** 10-bit minimum, 12-bit recommended for HDR workflows.

3. 🎧 Pixera Playback Setup

📺 Project & Timeline Configuration

- **Project Settings:** Match the resolution and frame rate exactly to the delivered content.
- **Color Space & Gamma:**
 - Pixera output settings:
 - SDR: Rec.709 Gamma 2.4
 - HDR: PQ ST2084

- **File Management:** Ensure media is stored on high-speed NVMe drives or RAID arrays for uninterrupted playback.

Content Mapping & Output

- **Mapping:** Accurately map content to the LED wall using Pixera's built-in mapping tools, aligning pixels precisely to physical LED pixels.
- **Output Synchronization:** Sync Pixera outputs using genlock to match camera shutter timing, eliminating visual artifacts during filming.

4. LED Wall Calibration for Accurate Color and Luminance

LED Wall Setup & Calibration

- **Hardware Configuration:**
 - Use industry-standard LED processors like Brompton or NovaStar for advanced color management.
 - Preferred LED Panels: High refresh rate panels with broad color gamut (DCI-P3 or wider).
- **Calibration Procedures:**
 - Initial Calibration: Use spectroradiometers (CR-300, SpectraCal C6) for precise color and luminance calibration.
 - White Point & Luminance:
 - SDR: D65 at 100 nits
 - HDR: D65 with maximum luminance (500-800 nits typical for VP)
- **Color Space & Gamma Settings:**
 - LED processors set to:
 - SDR: Rec.709 Gamma 2.4
 - HDR: PQ ST2084

5. Final Checks & Testing

On-Camera Testing



- **Camera Matching:** Adjust LED processor parameters to closely match the camera's sensor response.
- **Test Charts & Patterns:** Utilize test charts (X-Rite, SMPTE) to verify color accuracy and exposure consistency on camera.


Continuous Quality Assurance

- Regularly recalibrate displays and processors.
- Verify playback and synchronization daily to maintain accuracy throughout production.

For consultation or assistance:

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