HDR Readiness Checklist

Capture · master · encode · deliver · play · display — does your stack support HDR end-to-end? Version 1.0 · May 2026

1 · CAPTURE

- [ ] Camera shoots 10-bit or 12-bit, not 8-bit — *8-bit will band in HDR gradients*
- [ ] Camera records a log / RAW format (S-Log3, V-Log, RedRAW, ARRI LogC) — *preserves dynamic range*
- [ ] Color space is at least BT.2020 (or P3-D65 for cinema-bound content) — *BT.709 caps gamut*
- [ ] Frame rate locked to delivery target (24 / 25 / 30 / 50 / 60 fps) — *no broadcast-region drift*

2 · MASTERING

- [ ] Reference monitor calibrated to PQ (ST 2084) at 1000 nits, or HLG at 1000 nits — *for HDR10 / Dolby Vision / HLG*
- [ ] Master delivered in 10-bit 4:2:0 minimum, 10-bit 4:2:2 preferred — *12-bit for Dolby Vision Mezz*
- [ ] MaxFALL and MaxCLL measured and embedded for HDR10 — *static metadata required by spec*
- [ ] Dolby Vision XML (per-scene metadata) generated if shipping DV — *dynamic metadata, Profile 5/8.1*
- [ ] SDR trim pass produced for backward compatibility — *Dolby Vision auto-converts; HDR10 does not*

3 · ENCODE

- [ ] Codec supports 10-bit (HEVC Main10, AV1, VVC; never H.264 High10 in practice) — *H.264 has no HDR ecosystem*
- [ ] Color tags written into the bitstream: primaries=9, matrix=9, transfer=16 or 18 — *BT.2020 / PQ or HLG*
- [ ] Per-title or per-shot encoding ladder with at least one HDR rendition per resolution — *do not mix HDR/SDR in one ladder*
- [ ] VMAF measured with HDR-aware model, not the default SDR model — *default VMAF mis-scores HDR*

4 · DELIVER

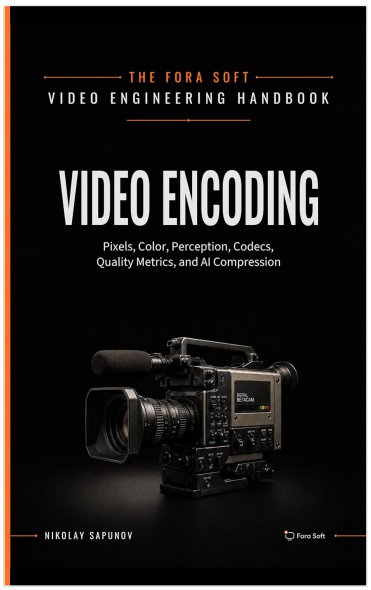
- [ ] Packager writes CMAF / fMP4 with HDR signaling in EXT-X-MEDIA / AdaptationSet tags — *HLS and DASH both need this*
- [ ] Manifest exposes separate HDR variants alongside SDR — never as fallback only — *device capability negotiation*
- [ ] DRM (Widevine L1, FairPlay, PlayReady SL3000) verified on each target HDR device — *L3 won't unlock HDR on most TVs*
- [ ] CDN cache keyed on codec + HDR format, not only resolution — *AVOID mixing HDR10 and DV in one variant*

5 · PLAY & DISPLAY

- [ ] Player negotiates HDR via EME / MediaCapabilities API — *Chrome, Safari, native apps all differ*
- [ ] Tone-mapping fallback path tested for SDR-only displays — *viewer must never see washed-out HDR*
- [ ] Tested on at least 3 HDR TV models (LG OLED, Samsung QLED, Sony LED) plus iOS / Android — *device matrix is wider than you think*
- [ ] Brightness mismatch (1000-nit master on 400-nit screen) verified to tone-map, not clip — *common failure mode*

MOST COMMON HDR PITFALLS WE SEE IN PRODUCTION AUDITS

• 8-bit somewhere in the chain (capture, intermediate, or encoder profile) — banding becomes inevitable.
• Missing or wrong color tags in the bitstream — players guess BT.709 and the image looks dim and desaturated.



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This checklist walks HDR from camera to screen and flags where the chain usually breaks. Volume 1 explains the signal behind every tick box: bit depth and banding, colour spaces from BT.709 to BT.2020, PQ and HLG transfer functions, HDR10 and Dolby Vision metadata, and measuring HDR quality correctly.

WHAT YOU WILL FIND INSIDE

- Bit depth, banding and 10-bit pipelines
- PQ, HLG, HDR10 and Dolby Vision metadata
- HDR-aware quality metrics
- BT.709, BT.2020 and colour tags in the bitstream
- Tone mapping HDR masters for SDR screens

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Planning to ship HDR and not sure which link in your chain will break it?

We will audit your capture-to-player chain against this checklist and fix the tags, ladder and player paths that make HDR look dim or banded. 250+ video products shipped since 2005.

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