| | | | | | | | LUTs for hardware | | | | Nominal Range LUTs for software | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | From | To | Comment | Variant | LUT Type | LUT Cube Size | LUT Mode | Input Signal Range | Output Signal Range | BT.709 colour matrix comp. | BT.709 colour matrix comp. | Filename |
| 1 | PQ 1000 | BT.2100 HLG | Type III recommended for hardware as they pass sub-blacks and super-whites (e.g. BT.2111 Colour Bars). | a | I | 33 | Narrow/Nominal | Narrow/Nominal | Narrow/Nominal | No | No | 1a_PQ1000_HLG_mode-nar_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | a65 | I | 65 | Narrow/Nominal | Narrow/Nominal | Narrow/Nominal | No | No | 1a65_PQ1000_HLG_mode-nar_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | b | I | 33 | Narrow/Nominal | Narrow/Nominal | Narrow/Nominal | Yes | | 1b_PQ1000_HLG_mode-nar_in-nar_out-nar_withcomp-v1_3.cube |
| | | | | c | II | 33 | Full | Full | Narrow with super-whites | No | | 1c_PQ1000_HLG_mode-full_in-full_out-nar_nocomp-v1_3.cube |
| | | | | d | II | 33 | Full | Full | Narrow with super-whites | Yes | | 1d_PQ1000_HLG_mode-full_in-full_out-nar_withcomp-v1_3.cube |
| | | | | e | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | No | | 1e_PQ1000_HLG_mode-full_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | f | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | Yes | | 1f_PQ1000_HLG_mode-full_in-nar_out-nar_withcomp-v1_3.cube |
| 2 | PQ 4000 | BT.2100 HLG | Luminance tone-mapping. Type III recommended for hardware as they pass sub-blacks and super-whites (e.g. BT.2111 Colour Bars). | a | I | 33 | Narrow/Nominal | Narrow/Nominal | Narrow/Nominal | No | No | 2a_PQ4000_HLG_mode-nar_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | a65 | I | 65 | Narrow/Nominal | Narrow/Nominal | Narrow/Nominal | No | No | 2a65_PQ4000_HLG_mode-nar_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | b | I | 33 | Narrow/Nominal | Narrow/Nominal | Narrow/Nominal | Yes | | 2b_PQ4000_HLG_mode-nar_in-nar_out-nar_withcomp-v1_3.cube |
| | | | | c | II | 33 | Full | Full | Narrow with super-whites | No | | 2c_PQ4000_HLG_mode-full_in-full_out-nar_nocomp-v1_3.cube |
| | | | | d | II | 33 | Full | Full | Narrow with super-whites | Yes | | 2d_PQ4000_HLG_mode-full_in-full_out-nar_withcomp-v1_3.cube |
| | | | | e | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | No | | 2e_PQ4000_HLG_mode-full_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | f | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | Yes | | 2f_PQ4000_HLG_mode-full_in-nar_out-nar_withcomp-v1_3.cube |
| 3 | BT.709 | BT.2100 HLG | Display-referred mapping maintaining SDR "look". 100% SDR maps to 75 % HLG (HDR Reference White - see ITU-R BT.2408 and BT.2390). **Recommended for matching the displayed colour of SDR graphics**. Type III preferred for hardware as they pass sub-blacks and super-whites. | a | I | 33 | Narrow/Nominal | Narrow/Nominal | Narrow/Nominal | No | No | 3a_BT709_HLG_DISPLAY_mode-nar_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | a65 | I | 65 | Narrow/Nominal | Narrow/Nominal | Narrow/Nominal | No | No | 3a65_BT709_HLG_DISPLAY_mode-nar_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | b | I | 33 | Narrow/Nominal | Narrow/Nominal | Narrow/Nominal | Yes | | 3b_BT709_HLG_DISPLAY_mode-nar_in-nar_out-nar_withcomp-v1_3.cube |
| | | | | c | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | No | | 3c_BT709_HLG_DISPLAY_mode-full_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | d | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | Yes | | 3d_BT709_HLG_DISPLAY_mode-full_in-nar_out-nar_withcomp-v1_3.cube |
| 4-1 | BT.709 (Square-root) | BT.2100 HLG | Scene-referred mapping. **Recommended for matching SDR graphics with in-vision branding**. 100% SDR maps to 75 % HLG (HDR Reference White - see ITU-R BT.2408 and BT.2390. Matched with LUT 12 (scene-light down-conversion) | a | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | No | | 4-1a_BT709_HLG_SCENE_mode-full_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | b | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | Yes | | 4-1b_BT709_HLG_SCENE_mode-full_in-nar_out-nar_withcomp-v1_3.cube |
| 4-2 | BT.709 (strict) | BT.2100 HLG | Scene-referred mapping. Recommended for matching SDR graphics with in-vision branding. 100% SDR maps to 75 % HLG (HDR Reference White - see ITU-R BT.2408 and BT.2390). Matched with LUT 12 (scene-light down-conversion) | a | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | No | | 4-2a_BT709_HLG_SCENE_mode-full_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | b | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | Yes | | 4-2b_BT709_HLG_SCENE_mode-full_in-nar_out-nar_withcomp-v1_3.cube |

| | | | | | | 33 | LUTs for hardware | | | | Nominal Range LUTs for software | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | From | To | Comment | Variant | LUT Type | 33 | LUT Mode | Input Signal Range | Output Signal Range | BT.709 colour matrix comp. | BT.709 colour matrix comp. | Filename |
| | | | | | | | | | | | | |
| 5 | BT.709 | BT.2100 HLG | Display-referred up-conversion for SDR "look". Recommended for graded content. Type III preferred for hardware as they pass sub-blacks and super-whites. Matched with LUT 8 (display-light "down-conversion"). 100 % SDR maps to 83 % HLG. 105% SDR maps to 87% HLG. | a | I | 33 | Narrow/Nominal | Narrow/Nominal | Narrow/Nominal | No | No | 5a_BT709_HLG_UPCONVERT_DISPLAY_ mode-nar_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | a65 | I | 65 | Narrow/Nominal | Narrow/Nominal | Narrow/Nominal | No | No | 5a65_BT709_HLG_UPCONVERT_DISPLAY_ mode-nar_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | b | I | 33 | Narrow/Nominal | Narrow/Nominal | Narrow/Nominal | Yes | | 5b_BT709_HLG_UPCONVERT_DISPLAY_mode-nar_in-nar_out-nar_withcomp-v1_3.cube |
| | | | | c | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | No | | 5c_BT709_HLG_UPCONVERT_DISPLAY_mode-full_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | d | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | Yes | | 5d_BT709_HLG_DISPLAY_UPCONVERT_mode-full_in-nar_out-nar_withcomp-v1_3.cube |
| 6-1 | BT.709 (Square-root) | BT.2100 HLG | Scene-referred SDR to HDR up-conversion. Recommended for matching SDR and HDR cameras in live production. Matched with LUT 12-1 (scene-light "down-conversion"). 100% SDR maps to 79% HLG. 105% SDR maps to 83% HLG | a | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | No | | 6-1a_BT709_HLG_UPCONVERT_SCENE_mode-full_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | b | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | Yes | | 6-1b_BT709_HLG_UPCONVERT_SCENE_mode-full_in-nar_out-nar_withcomp-v1_3.cube |
| 6-2 | BT.709 (Strict) | BT.2100 HLG | Scene-referred SDR to HDR up-conversion. Recommended for matching SDR and HDR cameras in live production. Matched with LUT 12-2 (scene-light "down-conversion"). 100% SDR maps to 79% HLG. 105% SDR maps to 83% HLG | a | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | No | | 6-2a_BT709_HLG_UPCONVERT_SCENE_mode-full_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | b | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | Yes | | 6-2b_BT709_HLG_UPCONVERT_SCENE_mode-full_in-nar_out-nar_withcomp-v1_3.cube |
| 7 | HLG | PQ 1000 | Type III recommended for hardware as they pass sub-blacks and super-whites (e.g. BT.2111 Colour Bars). | a | I | 33 | Narrow | Narrow | Narrow | No | No | 7a_HLG_PQ1000_mode-nar_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | b | I | 33 | Narrow | Narrow | Narrow | Yes | | 7b_HLG_PQ1000_mode-nar_in-nar_out-nar_withcomp-v1_3.cube |
| | | | | c | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | No | | 7c_HLG_PQ1000_mode-full_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | d | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | Yes | | 7d_HLG_PQ1000_mode-full_in-nar_out-nar_withcomp-v1_3.cube |
| 8 | HLG | BT.709 | Display-light conversion with colour volume management to preserve hue. Recommended for preserving the HDR "look" in SDR. Matched with LUT 6 (display-light "up-conversion"). HDR Reference | a | I | 33 | Narrow/Nominal | Narrow/Nominal | Narrow/Nominal | No | No | 8a_HLG_BT709_mode-nar_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | a65 | I | 65 | Narrow/Nominal | Narrow/Nominal | Narrow/Nominal | No | No | 8a65_HLG_BT709_mode-nar_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | b | I | 33 | Narrow/Nominal | Narrow/Nominal | Narrow/Nominal | Yes | | 8b_HLG_BT709_mode-nar_in-nar_out-nar_withcomp-v1_3.cube |
| | | | | c | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | No | | 8c_HLG_BT709_mode-full_in-nar_out-nar_nocomp-v1_3.cube |

| | | | | | | 33 | LUTs for hardware | | | | Nominal Range LUTs for software | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | White maps to 85% HLG. | d | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | Yes | | 8d_HLG_BT709_mode-full_in-nar_out-nar_withcomp-v1_3.cube |

| No. | From | To | Comment | Variant | LUT Type | 33 | LUT Mode | Input Signal Range | Output Signal Range | BT.709 colour matrix comp. | BT.709 colour matrix comp. | Filename |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | S-Log3 (100%) | BT.2100 HLG | BT.2020 colour.  100% S-Log3 (90% reflectance) maps to 73 % HLG (see BT.2408). | a | II | 33 | Full | Full | Narrow with super-whites & sub-blacks | No | No | 10a_S-Log3_100pc_HLG_mode-full_in-full_out-nar_nocomp-v1_3.cube |
| | | | | b | II | 33 | Full | Full | Narrow with super-whites & sub-blacks | Yes | | 10b_S-Log3_100pc_HLG_mode-full_in-full_out-nar_withcomp-v1_3.cube |
| 11 | S-Log3 (200%) | BT.2100 HLG | Typical SR-Live.  200% S-Log3 (90% reflectance) maps to 73% HLG. | a | II | 33 | Full | Full | Narrow with super-whites & sub-blacks | No | No | 11a_S-Log3_200pc_HLG_mode-full_in-full_out-nar_nocomp-v1_3.cube |
| | | | | b | II | 33 | Full | Full | Narrow with super-whites & sub-blacks | Yes | | 11b_S-Log3_200pc_HLG_mode-full_in-full_out-nar_withcomp-v1_3.cube |
| 12-1 | HLG | BT.709 (square-root) | Scene-light conversion, with a baseline hard gamut  clip.  Recommended for matching the SDR camera CCU output in live production. Matched with LUT 6-1 (scene-light down-conversion). 79% HLG maps to 100% SDR.  83% HLG maps 10 105% SDR. | a | I | 33 | Narrow | Narrow | Narrow | No | | 12-1a_HLG_BT709_SCENE_mode-nar_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | b | I | 33 | Narrow | Narrow | Narrow | Yes | | 12-1b_HLG_BT709_SCENE_mode-nar_in-nar_out-nar_withcomp-v1_3.cube |
| | | | | c | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | No | | 12-1c_HLG_BT709_SCENE_mode-full_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | d | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | Yes | | 12-1d_HLG_BT709_SCENE_mode-full_in-nar_out-nar_withcomp-v1_3.cube |
| 12-2 | HLG | BT.709 (strict) | Scene-light conversion, with a baseline hard gamut  clip.  Recommended for matching the SDR camera CCU output in live production. Matched with LUT 6-2 (scene-light down-conversion). 79% HLG maps to 100% SDR.  83% HLG maps 10 105% SDR. | a | I | 33 | Narrow | Narrow | Narrow | No | | 12-2a_HLG_BT709_SCENE_mode-nar_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | b | I | 33 | Narrow | Narrow | Narrow | Yes | | 12-2b_HLG_BT709_SCENE_mode-nar_in-nar_out-nar_withcomp-v1_3.cube |
| | | | | c | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | No | | 12-2c_HLG_BT709_SCENE_mode-full_in-nar_out-nar_nocomp-v1_3.cube |
| | | | | d | III | 33 | Full | Narrow with super-whites & sub-blacks | Narrow with super-whites & sub-blacks | Yes | | 12-2d_HLG_BT709_SCENE_mode-full_in-nar_out-nar_withcomp-v1_3.cube |
| 13 | For testing LUT hardware | | Pass-through LUT | a | N/A | 33 | N/A | N/A | N/A | No | | 13a_pass-through.cube |
| | | | R=0.0, G=0.5, B=1.0 | b | N/A | 33 | N/A | N/A | N/A | No | | 13b_static_0-0_0-5_1-0.cube |
| | | | R=0.0, G=0.5, B=1.0 | c | N/A | 33 | N/A | N/A | N/A | No | | 13c_static_0-4_0-5_0-6.cube |
| | | | R=0.125, G=0.5, B=0.875 | d | N/A | 33 | N/A | N/A | N/A | No | | 13d_static_0-125_0-5_0-875.cube |
| 14 | PQ 1000 P3D65 | HLG | For some Hollywood movie content to HLG | a | I | 33 | | | | No | No | 14a_PQ1000_DCI-P3_HLG_nocomp-v1_3.cube |
| | | | | a | I | 65 | | | | No | No | 14a65_PQ1000_DCI-P3_HLG_nocomp-v1_3.cube |
| 15 | HLG | PQ 1000 P3D65 | HLG to PQ 1000 for delivery to Netflix.  Software workflows. | a | I | 33 | | | | No | No | 15a_HLG_PQ1000_DCI-P3_nocomp-v1_3.cube |
| | | | | a65 | I | 65 | | | | No | No | 15a65_HLG_PQ1000_DCI-P3_nocomp-v1_3.cube |
| 16 | HLG | PQ 110 X'Y'Z' | HLG to PQ 110 X'Y'Z' for HDR cinema projection | a | I | 33 | | | | No | No | 16a_HLG_PQ110_DCI-P3_nocomp-v1_3.cube |