



HDR at W3C

ICC HDR Stills Expert Day
Tokyo, Japan
19 February 2024
Chris Lilley, W3C



Overview

Workshop on WCG & HDR (2021)
Portable Network Graphics (PNG)
HTML Canvas
Cascading Style Sheets (CSS)



Selected workshop outcomes:

Formats for HDR images needed

HDR tone mapping

Prototyping HDR in Canvas

WCG Interoperability in CSS



Portable Network Graphics (PNG)

Clarification: ICC.1 v2 & v4

Standardized: Animated PNG

Added: EXIF



Portable Network Graphics (PNG)

Coding-independent code points (CICP)
(from ITU-T H.273)

BT.2100 HLG = 09/18/00/01

Display P3 = 11/13/00/01



Portable Network Graphics (PNG)

Mastering Display Color Volume (MDCV)
(from SMPTE ST 2086)

e.g. P3-D65 2k in BT.2100 PQ container



Portable Network Graphics (PNG)

Content Light Level Information (CLLI)
(from SMPTE ST-2067-21)

Maximum Frame Average Light Level (MaxFALL)
Maximum Content Light Level (MaxCLL)



HDR in HTML Canvas

(by Christopher Cameron)



Cascading Style Sheets



CSS Color 4

SDR only

Predefined RGB color spaces
CIE Lab & LCH, Oklab & Oklch



CSS Color 4

Color **conversion**

Color **interpolation** (any colorspace)



Media Queries 5

Color **gamut** (srgb | p3 | rec2020)

Dynamic range (standard | high)



CSS Color HDR

BT.2100 HLG, PQ & linear

$IC_T C_P$

$J_z a_z b_z$ & $J_z C_z H_z$



CSS Color HDR

Dynamic-headroom-limit CSS property
(standard | high | constrained-high)

Continuously animatable