

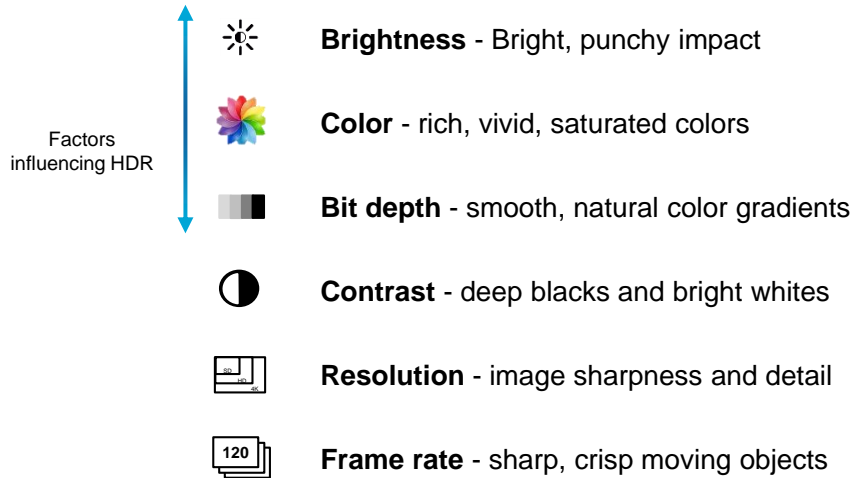


MAKING IMMERSIVE ENTERTAINMENT EVEN BETTER

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What makes an image fantastic

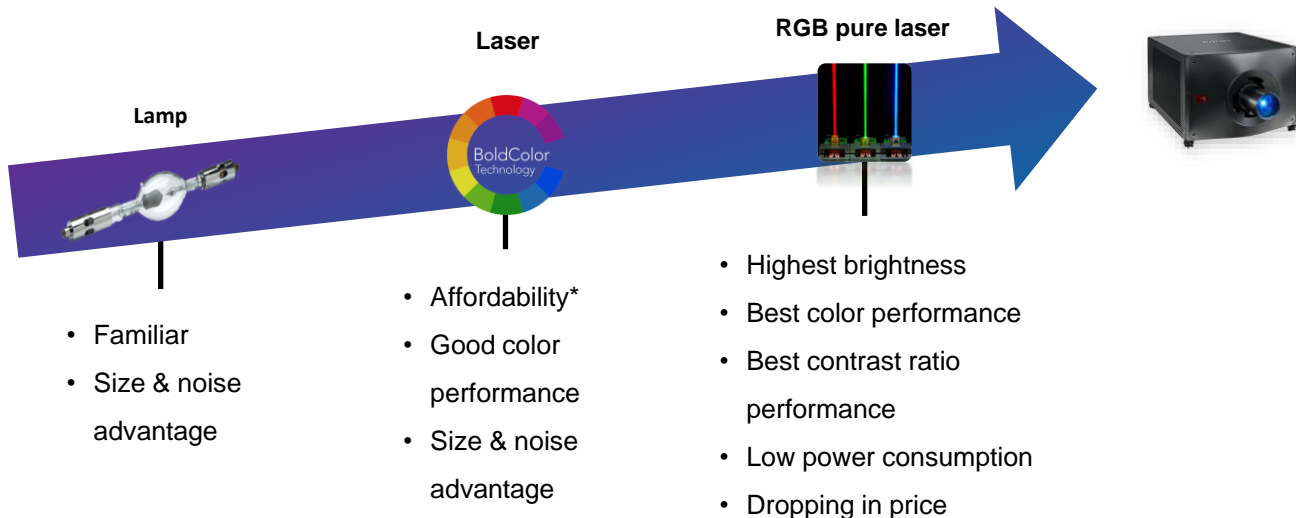


HDR and Wide Color Gamut (WCG)

- Bright brights
- Dark darks
- Contrast ratio
- Dynamic range
- Processing

The illumination evolution

To understand brightness and color, let's first look at the evolution of illumination



* It is considered more affordable at this point of time but please note that prices of RGB pure laser is also falling

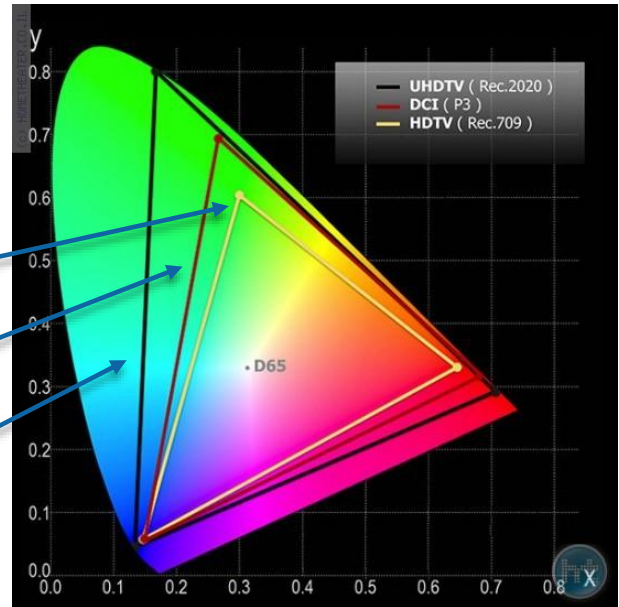
Color

Color gamut comparison

Mercury lamp and most **laser** Projectors

Xenon lamp and some **laser** (D-Cinema)

RGB pure laser projector color gamut capability





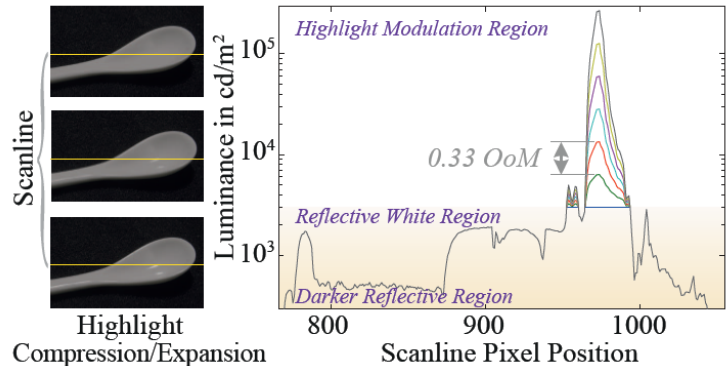
COLOR SATURATION

What is the impact of true HDR?

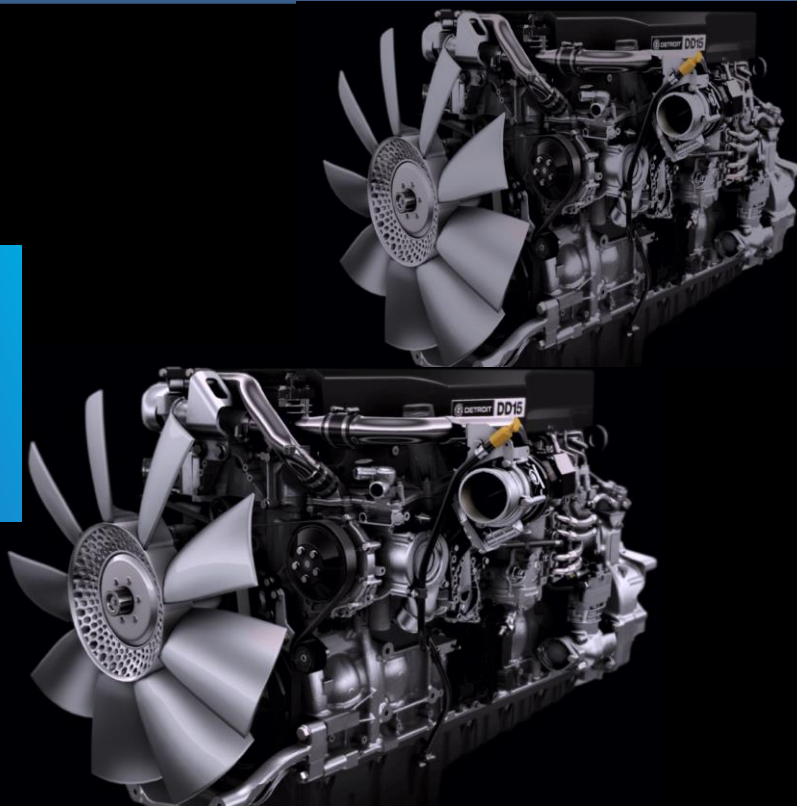
(high dynamic range)

True HDR Looks “3D” (without the glasses!)

- › Real world objects have “specular highlights”
- › These are small regions of very high brightness where light is being directly reflected directly towards the eye
- › A display’s ability to reproduce these highlights is limited by its Dynamic Range
- › In the example to the right the spoon is shown with 3 different levels of specular highlights drawn



EXAMPLE OF
SPECULAR
HIGHLIGHTS WITH
AND WITHOUT HDR

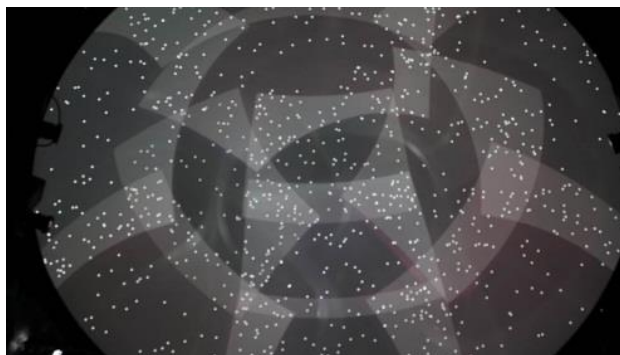




HDR PRODUCES AN
AMAZING PICTURE

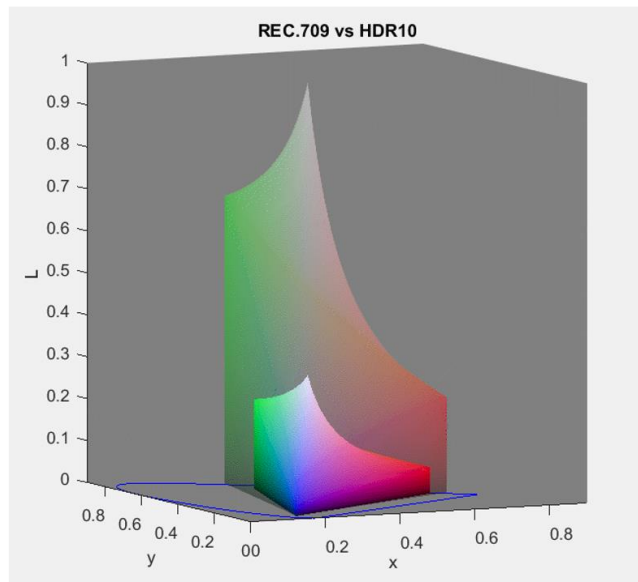
Advancing technologies for more realistic, immersive experiences

- › **Automation** – facilitating maintenance of multi-projector array with fully automated calibration
- › **Black level blending** – correcting for flat, uniform black
- › **Upgradeability** – many features can be enabled later like:
 - › Higher frame rates,
 - › More brightness (RGB pure laser),
 - › Automated tools



Color Volume

- › Color volume is important because it not only depicts the accuracy of specific colors that can be displayed, but also the dynamic range or luminosity range of the colors
- › This is sometimes referred to as a “3D Color Gamut” and higher the color volume capabilities, the better the display device can express a vast range of vivid, accurate colors



Color Volume

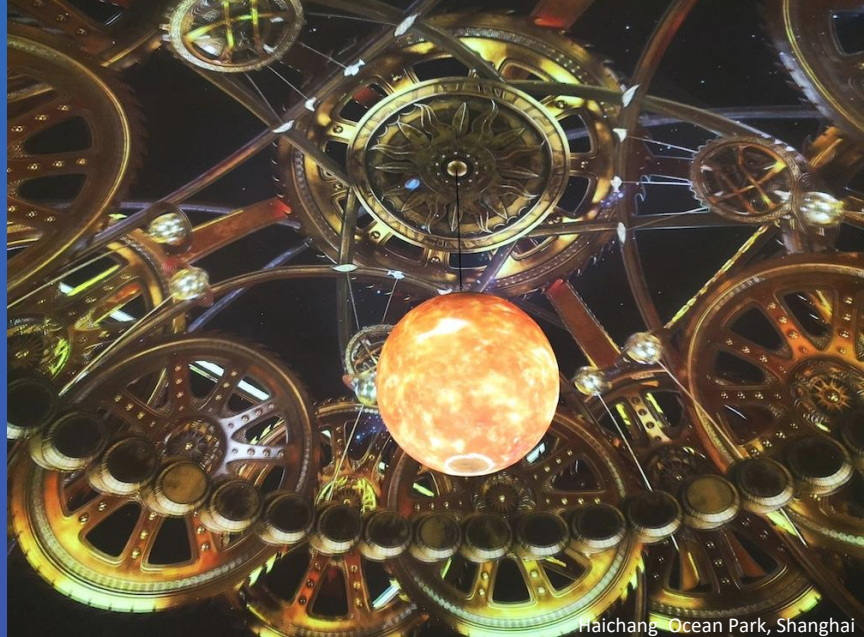
- › The most obvious benefit of a dramatic increase in color volume is saturation
- › Image 1: Traditional Rec. 709 display.
- › Image 2: simulates how the same car would look if rendered with Rec. 2020



Thank you

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Haichang Ocean Park, Shanghai

