



BROMPTON HYDRA

Beyond resolution

The race for resolution is not the most important race any more. Beyond a certain point, fine pixel pitches in LED panels can do more harm than good, to both budget and performance.

High Dynamic Range video offers a new approach, and when done properly it's a sure-fire route to sharper, more vivid, and more lifelike images.

Recent technology demos have shown that with the right LED panels, the right processing system, and the right calibration techniques, HDR can offer a huge step up in image quality on LED screens.

Rather than simply another increase in resolution, High Dynamic Range (HDR) video brings a trio of image quality improvements that are particularly well-placed to be the next big thing for LED screens.

For every pixel, HDR describes a larger brightness range, a wider colour gamut, and a higher bit depth. The brightness range offered by conventional Standard Dynamic Range (SDR) video's 'gamma curve' - the transfer function that encodes luminance or brightness into a video signal - doesn't get close to exploiting the 10,000:1 brightness range perceptible by the human visual system.

To improve this, we have to expand the brightness range by breaking away from that basic gamma curve.

Putting all this together, HDR is potentially fantastic news for LED screens.

First, LEDs can offer the brightness range necessary to display HDR content, which is typically thousands of Nits (cd/m²), and modern high-quality RGB LEDs are capable of a colour gamut approaching that of Rec.2020, ensuring saturated colours can be faithfully reproduced.

Independent control over every LED means we can reproduce the full brightness range without losing detail, and with perfect blacks and no backlight bleed, LED screens generate far fewer undesirable artefacts than many other technologies.

