**Dynamic Calibration** unlocks previously unattainable LED performance.

Commonly used calibration methods achieve uniformity by sacrificing both brightness and colour gamut, forcing every LED to match the dimmest and palest LEDs in the entire screen. With ever-increasing demand for better image quality without increased cost, this sacrifice in performance cannot be justified. **Dynamic Calibration** is a revolutionary new approach to maintaining uniformity while unlocking the full potential of the LEDs to achieve previously unthinkable levels of brightness and colour saturation.

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**EXTREME BRIGHTNESS**

Ultra-bright areas of video content make full use of the LEDs’ brightness for maximum visual punch.

**PRECISE COLOUR ACCURACY**

Sensitive areas of content, such as skin-tones, are perfectly balanced for authentic, lifelike colours.

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**OUTSTANDING UNIFORMITY**

Smooth areas of content are displayed with remarkable uniformity to ensure image clarity.

**INTENSE COLOUR SATURATION**

In vivid areas of colour, Dynamic Calibration adapts to employ the maximum available gamut of the LEDs, delivering eye-catching, vibrant imagery.

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Dynamic Calibration offers adaptive performance to suit different areas of your content.
LIFELIKE COLOUR AND BRIGHTNESS WITHOUT COMPROMISE

The legacy approach is to apply a fixed, factory-specified calibration that is used for all content over the entire life of the panel. **Dynamic Calibration** is much more flexible, and uses the immense parallel computing power of the R2's Dynamic Engine to process incoming video in an entirely new and innovative way.

Before making any decisions, the Dynamic Engine gathers a vast array of data, including the incoming video pixels, the video signal's metadata, **Dynamic Calibration** metadata, the precise capabilities of each individual LED and the user's preferences for how the image should be displayed.

All of this extra information is processed in real-time, with no added latency, to intelligently determine the best possible way to drive each LED. Areas of the image where peak brightness is the most important visual aspect will make full use of the LEDs' peak brightness. Areas requiring extreme saturation will make full use of the LEDs' maximum colour gamut. But all this is achieved without needlessly sacrificing uniformity across the rest of the image.

Colour accuracy is managed throughout the entire system. Even with no user configuration, colours are perfectly balanced, skin-tones look natural and content looks just the way its author intended.

The result of this unique approach is a huge step forward in visual performance. Brighter whites, higher contrast ratios, more saturated colours, and true-to-life colour accuracy deliver a previously unattainable level of image depth and realism. Lifelike colour and brightness without the compromises inherent to legacy calibration.
THINK OUTSIDE THE TRIANGLE

The dynamic nature of the system means the desired brightness, primary colours and white point are all fully user-adjustable. What would previously have required a lengthy and expensive recalibration process can now be done at any time from the simple new DynaCal user interface on any Tessera processor, with changes seamlessly reflected in real-time on the screen – even during a live event.

This new level of interactivity encourages experimentation and more aggressive choice of colour and brightness targets to unleash the performance of your LEDs.

Proprietary colour processing algorithms ensure visual quality is maintained even at extremes of brightness and colour gamut, while also ensuring the LEDs aren’t driven beyond their design limits.

Zebra indicators can be enabled to highlight areas of the image that are trying to drive the LEDs beyond their peak brightness or colour gamut, allowing rapid fine-tuning of screen performance based on the content, viewing environment and user preferences.

*Over-bright zebra* displays scrolling diagonal black lines in areas of the image which exceed the available brightness of the LED screen

*Out-of-gamut zebra* displays scrolling diagonal black lines in areas of the image which exceed the available gamut of the LED screen
BREATHE NEW LIFE INTO OLD PANELS

This technology isn’t just for brand new LED panels; existing panels using the Tessera R2 card can be given new lease of life with Dynamic Calibration by recalibrating them using the Hydra measurement system from Brompton Technology.

Panels may then be used with any Tessera processor, all of which fully support Dynamic Calibration following a free firmware update.

Dynamic Calibration also enables a range of other new technologies:

HDR – Only Dynamic Calibration offers the increased brightness and colour gamut that’s required to realise the benefits of High Dynamic Range content on supported processors.

ThermaCal – The Dynamic Engine provides real-time compensation for thermal artefacts such as pink/cyan pin-cushioning, and gradients due to swapped modules.

PureTone – Limitations in the driver chips, LEDs and panel electrical design can be overcome to ensure neutral colour balance across the entire greyscale.

For more detailed information on HDR, ThermaCal and PureTone, please refer to the separate Feature Spotlights for each of these technologies.