Feature Spotlight

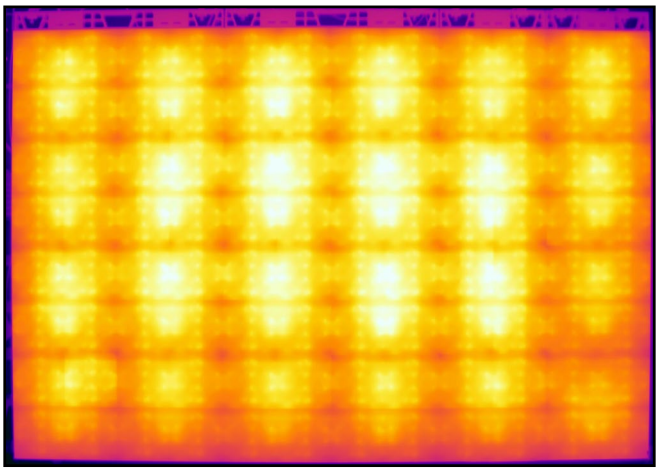
THERMACAL

When it gets hot, stay smooth.

Thermal patterning on hot LED panels is a thing of the past thanks to the new Dynamic Calibration feature ThermaCal.

LEDs are affected by temperature, and all tend to be a bit less bright as they get hotter. But the scale of this effect varies between colours, with red LEDs most strongly affected: heat a red LED by 10 degrees and its output typically drops by 10%.

Because of this difference in effect between LED colours, areas that are hotter or colder than the temperature the panel was calibrated at can show a colour shift. What's more, panels often heat up more in the centre than round their edges, which can lead to unsightly thermal patterns that mark out individual panels in the wall.



Thermal image of a screen containing 24 LED panels (6 wide, 4 high)

✓ ThermaCal is exclusive to Brompton receiver card based panels that have been calibrated with Dynamic Calibration.

Uncorrected panels show a regular patterning of cyan colour shift, corresponding to the hotter parts of the screen.

Even Panels At Any Temperature

ThermaCal compensates for these effects and gives the user control of how much compensation is required based on the panel temperature and environment.

It does this by both separating thermal effects from the optical calibration and by profiling each panel type to understand in detail its thermal characteristics for a smooth, panel-specific correction.

The amount of correction can be adjusted dynamically, even during a show, to account for changes in temperature over time.

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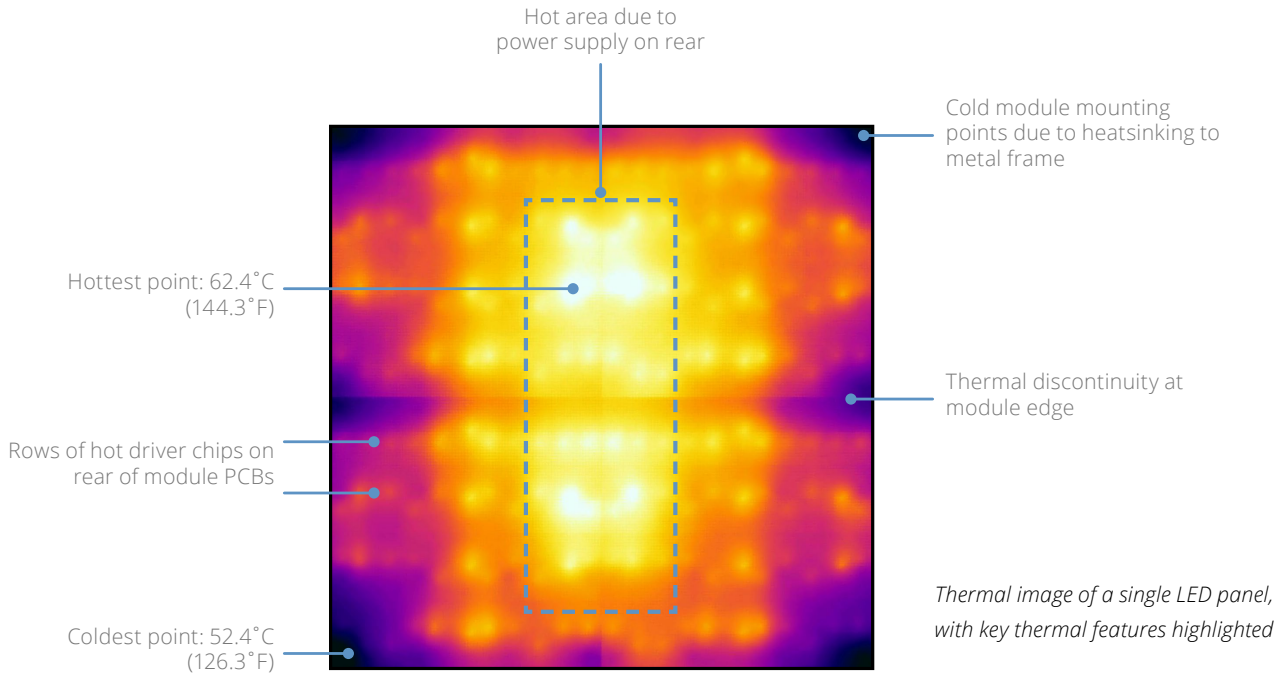
Panel-Specific Calibration

It is essential that corrections for optical colour and brightness differences are stored within each LED module, so that they travel with modules when they are swapped around.

However - the ThermaCal compensation is applied at the panel level, so modules can be swapped around freely without introducing visual artefacts due to the module being in a different position compared to when it was calibrated.

This is impossible with legacy calibration techniques that mix up optical and thermal characteristics in a single correction based on the temperature and module position at which they were calibrated.



Thermal image of a single LED panel, with key thermal features highlighted

Profiling Service

Brompton Technology offers a profiling service for receiver card based panels using Dynamic Calibration, with a technician going on site to calculate the panel's ThermaCal and PureTone profiles in a single visit. Once profiling is completed, the profile data will be incorporated into the fixture library supplied with the Tessera software.

Brompton Technology is the market leader in LED video processing for the most demanding applications across live events, virtual production, broadcast/XR, simulation/VR, fine-pitch installations and esports. The company has won multiple awards and become a globally respected brand, known for the quality and reliability of its products and exceptional technical support. For more information, visit www.bromptontech.com.

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