media engineers ltd

Calibration - Making sure you get the most accurate colour for film & television work

If you want to get the best colour possible, we offer a calibration service for grade 1 broadcast OLED, LCD and CRT-based monitors. By default, we work to the EBU/BBC standard, with a white point at 100Cdm^{-2} and a colour temperature of 6504K (aka 'illuminant D'), although we are aware that facilities that grade for film will set their monitors slightly dimmer (in the 60-70Cdm^{-2} range) for better Delta-E performance. We can also calibrate for HDR workflows, including Dolby Vision and HLG (the BBC/NHK standard).

If you require calibration to another standard (we can only work to a calibrated standard like Rec.790, not an opinion), please let us know ahead of our site visit. Here are a few things to consider:

Source material

We will bring test footage on a portable replay device that has SDI and HDMI outputs. If you have a monitor with other inputs please let us know.

Accurate monitoring

Our monitor calibration service isn't about making your monitor look 'great', it's about ensuring it's accurate. We aim to produce an honest display that shows good pictures when the pictures are good, as QC is done on a calibrated monitor, not a 'great' monitor. A modern monitor like Sony's X300 or Eizo CG3145 can work to many HDR and SDR standards, but setting one for many profiles in akin to calibrating several monitors.

White levels

We often arrive in edit suites and find the whites set at twice what they should be (typ. 200 Cdm^{-2}) because the room isn't set up for grading and has too much ambient light. At those light levels, your eyes aren't seeing any black detail and your monitor is likely out of its linear range, with the fidelity in the whites being compromised.

Black levels

Ambient lighting affects black levels noticeably. Please think about the lighting in your room so that we can set accurate blacks for the same environment you'll be working in. We'll show you how to reset your blacks if you need to brighten up the room (for a client viewing, for example).

Computer monitors

These are designed for displaying computer GUIs at much higher light levels than you would grade, and so a correctly calibrated broadcast monitor next to an Apple Cinema Display will look milky and dim. You can't grade accurately off the Cinema Display and so can't make your broadcast monitor match. Always treat your NLE's playback display as content only – it isn't colour- or light-level accurate and will never match the broadcast Rec. 709 standard.

LUTs

If you want us to profile a display to produce a monitoring LUT to match a TV or projector to a given standard, please bear in mind that this takes time (typically two hours for a 17^3 LUT) and will require an external LUT box to 'tame' the monitor. We can advise how successful this is likely to be.

LCDs, plasma, OLEDs, projectors and other domestic TV displays

We are often asked to match a projector to the grading monitor, but televisions are brighter than grading levels and should be treated as client content monitors only. We will give our best effort to colour match them, and for closer matching we can profile a TV and generate a LUT which will allow much better (but never perfect) matching to grade 1.

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