A number of voices are being raised about the escalation in the contrast wars in Projector-land.

Here we'd like to share the observations of Greg Jeffreys, Director of Paradigm Audio Visual Ltd. in UK:

"Is a usable contrast figure one which tells you how either bright or dark the image can be in separate images (i.e. the on/off type figure), or one that tells you how a projector & specific lens can render blacks and whites on the same image (i.e. the ANSI [checker board] contrast figure)? The former is theoretical in that has nothing do with delivered image quality, nothing to do with how the remainder of the light path and the lens will affect the image we view. The latter is surely the information needed in real life.

On our initial committee work in 2005 for the project to develop the quality standard for specifying and assessing projected images (now subsumed into the InfoComm project, on whose new Steering Committee I sit), we found the following:

- That most normal LCD projectors produce approx 30–60:1 ANSI. Even now it's hard to find any projector over 200:1
- That an image quality of from 20:1 was agreed to be 'good' unanimously by the committee, and that 10:1 was even quite acceptable
- That most front projection images in normal meeting rooms were likely to produce in the range of 2-10:1 ANSI contrast. (Rear projection can typically produce 20-200:1)
- That, with the exception of darkened, cinema-type environments, front projection contrast on normal screens is entirely a function of how much ambient light falls on the screen
- That it seems likely most projectors are assessed by their manufacturers with all settings on/near maximum and that the ANSI test methodology of setting the projector up to a grey scale from an external pattern generator is not generally observed. (The whole grey scale thing seems to somehow be ignored with projected images. Why? It's recognised as important with other displays.)

You can find in reference works statements that, from a given adaptation level, if the eye sees something 30 x brighter it will perceive it as white, and 30 x darker, as black. (30 x 30 = 900, presumably one provenance for the old cine standard of 1000:1??). If you printed this page out, you'd find it to be very acceptable contrast – but would measure it probably somewhere around 50:1.

Therefore there's a need for wholesale recalibration of our expectations on contrast. Projectors produce much less contrast than these inflated figures imply. But projected images don't need numbers with all those zeros! There's a common ground to be found in the middle.

Surely consultants and specifiers need to start asking projector manufacturers a very simple question: 'What is the contrast ratio of a specific projector fitted with a specific lens, according to ANSI (IT7.228-1997) methodology, with the device adjusted to the prescribed external grey scale?' Now that's a number we can work with!

I attach the latest draft of the best practice paper as it's not yet uploaded to our page on the InfoComm site, although you'll find the spreadsheets there.

This is not aimed at either Epson in general or projector manufacturers in general as they have to live in the real world. If one manufacturer claims numbers on the basis of a certain, albeit debatable, methodology, it's must be impossible for others not to follow. After all, the end user has little or no idea about this – it's a simple question of many 'bangs per buck'.

If you ask a manufacturer privately why they don't say what their ANSI contrast figures are, they'll often reply 'well you never asked'! Fair enough, but what if someone did start asking for this publicly…?"

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For a draft of the Best Practice Paper, email **ECI** and we'll forward it on.