Subjective quality of video sequences rendered on LCD with local backlight dimming at different lighting conditions - DTU Orbit (16/01/2019)

Subjective quality of video sequences rendered on LCD with local backlight dimming at different lighting conditions

This paper focuses on the influence of ambient light on the perceived quality of videos displayed on Liquid Crystal Display (LCD) with local backlight dimming. A subjective test assessing the quality of videos with two backlight dimming methods and three lighting conditions, i.e. no light, low light level (5 lux) and higher light level (60 lux) was organized to collect subjective data. Results show that participants prefer the method exploiting local dimming possibilities to the conventional full backlight but that this preference varies depending on the ambient light level. The clear preference for one method at the low light conditions decreases at the high ambient light, confirming that the ambient light significantly attenuates the perception of the leakage defect (light leaking through dark pixels). Results are also highly dependent on the content of the sequence, which can modulate the effect of the ambient light from having an important influence on the quality grades to no influence at all.

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