

## DOCKETED

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## **Flicker standards aren't perfect but NEMA 77 better than JA8**

The current JA8 standard for flicker was well-intentioned and was an improvement on no standard at all for flicker, but it does not characterize flicker well enough to limit poor products. The NEMA 77 proposed standard uses a combination of Pst and SVM instead of a flat 30% flicker maximum for all sources under 200 Hz. It proposes a target value of SVM of 1.6 as a maximum allowed flicker value in the stroboscopic range.

My concerns are that Pst and SVM would allow too great a modulation in ranges of 60-100 Hz, and the value of 1.6 would allow magnetically ballasted fluorescent which has been linked to headaches and migraines. (Veitch and McColl 1995; Wilkins and Bedocs et al 1989.) I have personal experience with products whose waveforms produce an SVM of 1 to 1.6 where the flicker is clearly visible and annoying. So, here's what I suggest: NEMA 77 is an improvement on a flicker standard. Adopt it provisionally. But, it needs ongoing research and discussion, and the target value of SVM needs to be 1.0 rather than 1.6. Furthermore, SVM is a metric based on VISIBILITY of flicker, not NEUROLOGICAL RESPONSE to flicker. If we learn that those neurological responses are not related to visibility of flicker, then we may have to revisit this issue.