

SIGN RESEARCH FOUNDATION EXECUTIVE SUMMARY

NIGHT-TIME BRIGHTNESS LEVEL RECOMMENDATIONS FOR ON-PREMISE ELECTRONIC MESSAGE CENTERS



Brighter doesn't necessarily mean better. When electronic message centers (EMCs) are unreasonably bright, neither the business nor the community is well served.

"Night-time Brightness Level Recommendations for On-Premise Electronic Message Centers," expanded and re-released in August 2016 by the International Sign Association, explores scientifically researched, easily understandable recommendations for EMC brightness. The report was based on research performed by noted lighting expert Dr. Ian Lewin, past president of the Illuminating Engineering Society (IES).

The most recent version of the report includes the recommended lighting level and model code language, more detailed information on measuring brightness levels with and without operational control, and several case studies.

Proper EMC brightness offers numerous advantages: It conserves energy; it increases the life expectancy of the electronic display components; it prevents glare and it ensures legibility of the display.

It's important to note that EMCs and digital billboards are not synonymous. Each has its own capabilities, purposes, intended audiences and regulations. This document refers only to on-premise EMCs that advertise goods and services available at that particular location. In addition, EMCs use a different lighting technology than most traditionally internally illuminated signs. As such, the recommendations in the report do not apply to other signs such as channel letter and exposed neon.

KEY TAKEAWAYS

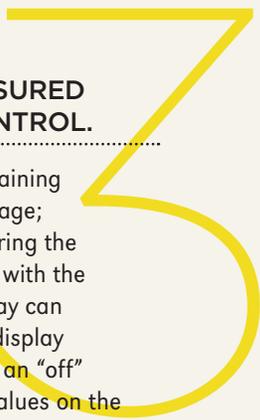
This report identifies three key takeaways from "Night-Time Brightness Level Recommendations for On-Premise Electronic Message Centers:"

FOR NIGHT-TIME VIEWING, IT IS RECOMMENDED THAT EMC'S NOT EXCEED 0.3 FOOT-CANDLES OVER AMBIENT LIGHTING CONDITIONS WHEN MEASURED AT THE RECOMMENDED DISTANCE, BASED ON THE EMC SIZE.

- EMCs are designed for legibility during daylight, but brightness settings tend to be inappropriate for night-time viewing.
- EMCs may be dimmed manually, through programmed schedules or through photocell technology for night-time viewing.
- Dr. Lewin recommends the development of brightness criteria based on the Illuminating Engineering Society's standards pertaining to light trespass, which involves determining how much light can trespass into adjacent areas without being offensive.

NUMEROUS COMMUNITIES HAVE ADOPTED THE NEW RECOMMENDATIONS WITH GREAT SUCCESS.

- Columbus, Ohio, was receiving complaints about digital sign brightness. City planners explored brightness limits for on-premise and off-premise digital signs, as well as testing methods. Research included an ISA demonstration that showed the impact of different testing methods; one required getting up on a lift and shining a nit gun on the sign, while the other allowed testers to remain on the ground. The new code, based on measurement of foot-candles, has significantly reduced administrative burden.
- Kitsap County, Washington, a transition county between the more rural part of the state and the city of Seattle, crafted regulations that brought stability and made it easy for businesses to convert existing static monument signs into electronic signs. But, they were not written in a way that would allow billboards to convert. ISA provided industry expertise and resources, including the recommended brightness levels.
- Sparks, Nevada, had outdated, less-than-explicit regulations for EMCs; they were also in lumens, which local officials had trouble measuring. As the community continued its rapid growth, the code went under revision, and measurement by both nits and foot-candles was explored. Choosing foot-candles resulted in the use of a simple light meter to measure brightness rather than guesswork.



NIGHT-TIME BRIGHTNESS CAN BE MEASURED WITH OR WITHOUT OPERATIONAL CONTROL.

- With operational control, the steps include obtaining an illuminance meter; determining square footage; determining the measurement distance; preparing the display for testing; measuring EMC brightness with the illuminance meter; and ensuring that the display can adjust to different ambient conditions. As the display alternates between a solid white message and an “off” message, the tester should note the range of values on the illuminance meter. A reading of less than 0.3 foot-candles is compliant.
- If EMC brightness must be evaluated without access to the sign controls—or if the measurement must be taken after business hours—the process is different. Here, the tester measures the difference in brightness between the sign in operation and when completely blocked from the illuminance meter. The steps include obtaining an illuminance meter; determining square footage; determining the measurement distance; positioning testers with a piece of painted cardboard cut to proper size; using the illuminance meter; and determining the brightness level. If any reading exceeds the maximum brightness level, the sign is non-compliant.

FOOT-CANDLES VS. NITS

More than 250 localities and many state departments of transportation have adopted the foot-candle measurement for EMCs rather than nits. Here’s why:

FOOTCANDLES	NITS
MEASURES ILLUMINANCE	MEASURES LUMINANCE
ACCOUNTS FOR AMBIENT LIGHT CONDITIONS	MEASURES ONLY THE AMOUNT OF BRIGHTNESS EMITTED
LUX METER MEASURING DEVICE: ~\$100	LUMINANCE SPECTROMETER (NIT GUN): ~\$1,000
“TWILIGHT” MEASUREMENT POSSIBLE	DOES NOT ALLOW ADJUSTMENT BASED ON AMBIENT LIGHT
MEASURES LIGHT IMPACT AND APPEARANCE	DOES NOT MEASURE APPEARANCE
WORKS WITH ROADWAY LIGHTING STANDARDS	DIFFICULT TO MEASURE ACCURATELY
EASIER TO CHECK AND ENFORCE	DIFFICULT TO ENFORCE

Read the full report **Night-time Brightness Level Recommendations for On-Premise Electronic Message Centers** (updated 2016) at: www.signs.org/EMCs

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