RESOLUTION No. 15-179

A RESOLUTION OF THE MAYOR AND THE CITY COUNCIL OF THE CITY OF DORAL, FLORIDA, SITTING AS THE LOCAL PLANNING AGENCY, GOING FORWARD WITHOUT A RECOMMENDATION OF AN AMENDMENT TO THE CITY'S LAND DEVELOPMENT CODE BY ESTABLISHING PERMITTING CONDITIONS, CONSTRUCTION AND USE STANDARDS, AND OTHER CONSIDERATIONS FOR ELECTRONIC MESSAGE CENTERS; AND PROVIDING FOR AN EFFECTIVE DATE

WHEREAS, the City of Doral (the "City") is proposing an amendment to the City sign regulations in the Land Development Code, attached hereto as Exhibit "A" ("Amendment"), to establish the minimum necessary legal framework for the orderly and harmonious installation of Electronic Message Centers ("EMC") in the City; and

WHEREAS, after careful review and deliberation, staff has determined that this proposed amendment to the City's sign regulations is consistent with the Comprehensive Plan and Land Development Code; and

WHEREAS, on September 16, 2015, the City Council will hold a public hearing and receive testimony and evidence related to the proposed procedures, and found that the proposed amendment is consistent with the Land Development Code; and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF DORAL, FLORIDA, SITTING AS THE LOCAL PLANNING AGENCY, THAT:

Section 1. Recitals. The above recitals are true, correct, and incorporated herein and made a part hereof by this reference.

Section 2. Decision. The Amendment to the City sign regulations to establish the minimum necessary legal framework for the orderly and harmonious installation of

Electronic Message Centers (EMCs) in the City is hereby passed without a recommendation.

Section 3. Effective Date. This Resolution shall be become effective upon adoption.

The foregoing Resolution was offered by Vice Mayor Ruiz who moved its adoption. The motion was seconded by Councilmember Cabrera and upon being put to a vote, the vote was as follows:

Mayor Luigi Boria	Yes
Vice Mayor Sandra Ruiz	Yes
Councilman Pete Cabrera	Yes
Councilwoman Christi Fraga	Absent
Councilwoman Ana Maria Rodriguez	Absent/Excused

PASSED AND ADOPTED this 16 day of September, 2015.

LUIGI BORIA, MAYOR

ATTEST:

CONNIE DIAZ, CITY CLERK

APPROVED AS TO FORM AND
LEGAL SUFFICIENCY FOR THE SOLE USE
OF THE CITY OF DORAL

WEISS, SEROTA, HELFMAN, COLE, & BIERMAN, PL
CITY ATTORNEY

EXHIBIT “A”

EXHIBIT 'A'

Recommended *Night-time Brightness Levels* for On-Premise Electronic Message Centers (EMC's)

ISA® International Sign Association

A Compilation Summary with Extracts from Industry Reports

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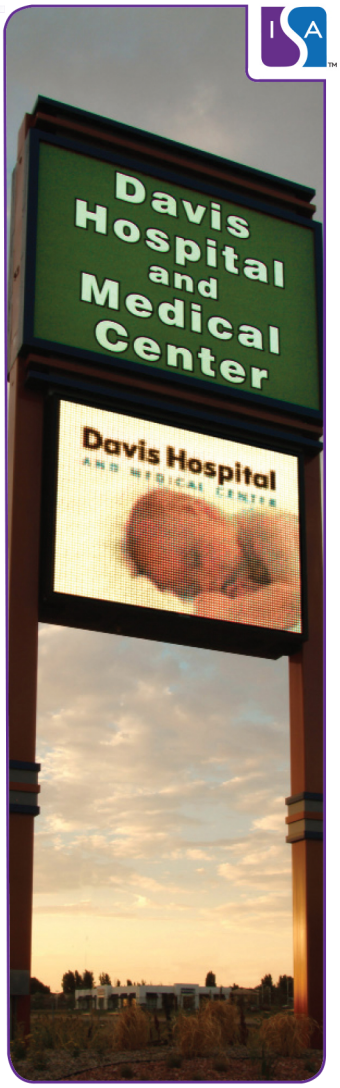


INTERNATIONAL SIGN ASSOCIATION

Introduction

Electronic Message Centers (EMC's)

One of the more interesting types of signage that is becoming increasingly popular is on-premise **electronic message centers**, or **EMCs**. You may have heard EMCs being referred to as changeable message displays or digital signs.

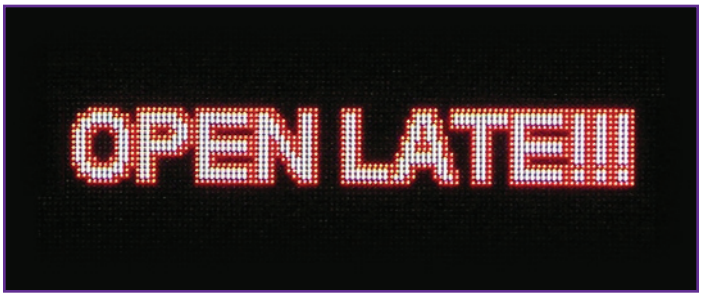
EMCs are *not* digital billboards, which advertise a good or service that is located away from where the sign is located. Rather, EMCs are digital signs that are located *on the premises* of the business, and that advertise goods and services that are provided at the location.

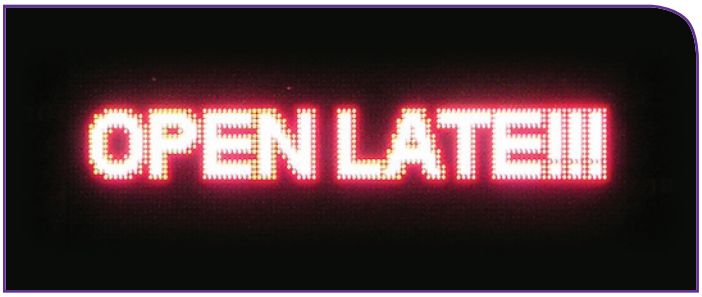
Digital billboard/off-premise sign advertising an automobile business away from where the sign is located

Electronic Message Center (EMC)/on-premise sign advertising an automobile business that is located at the place of business

There is often confusion regarding on and off-premise digital signs. However, EMCs and digital billboards have very distinct capabilities and purposes, each targets a specific audience and each has traditionally been treated under separate legal and regulatory regimes. For the purposes of this publication, *we are focusing solely and exclusively on EMCs.*

EMCs that are too bright at night can be offensive and ineffective. EMC brightness at night is an issue where sign users, the sign industry, and the planning community have a common goal: ensuring that EMCs are appropriately legible. We know the messages that these signs convey can be rendered unattractive and perhaps even unreadable if they are programmed too bright.





That's why many sign companies recommend to their customers that in order for these signs to be most effective, their brightness be set at such a level to be visible, readable and conspicuous.

In 2008, the International Sign Association (ISA) retained Dr. Ian Lewin of Lighting Sciences to help the industry develop scientifically-researched, understandable recommendations for EMC brightness. Dr. Lewin is a past chair of the Illuminating Engineering Society of North America (IES), and is greatly respected within the lighting field. His work for ISA was conducted with the input of experts within the sign industry. Dr. Lewin's full report can be found at www.signs.org.

As a result of this research, the recommended night-time brightness level for on premise EMCs is 0.3 foot candles above ambient light conditions when measured at an appropriate distance. This is a lighting level that works in theory and in practice.

The research and the recommendations contained in this report pertain only to EMCs, not traditionally internally illuminated signs, such as these channel letter and neon signs below. EMC's use a different lighting technology than most of these types of signs, and as such the scientific approach differs.

You can rest assured that the information contained in this publication is relevant, appropriate and workable for determining night-time EMC brightness levels.

We have provided six short steps to help guide the process and recommended statutory language. If you need further assistance, feel free to contact ISA at (703) 836-4012 to answer any of your EMC brightness questions.

EMCs and digital billboards have very distinct capabilities and purposes, each targets a specific audience and each has traditionally been treated under separate legal and regulatory regimes.

Executive Summary

ISA Electronic Message Display Brightness Recommendations

This summary has been developed to assist stakeholders concerned with development of brightness standards for large-format, electronic displays used for on-premise sign applications. This summary comprises:

1) an overview of the importance of ensuring appropriate brightness,
2) technology utilized to ensure appropriate brightness,
3) recommended brightness standards, and
4) brightness measurement methodology.

1. Overview of the importance of ensuring appropriate night-time brightness.

Electronic displays that are too bright at night can be offensive and ineffective. There are significant advantages to ensuring than an electronic display is not overly bright. These advantages include:

- Conservation of energy
- Increased life expectancy of the electronic display components
- Building goodwill with the community
- Ensuring the legibility of the display

It is in the best interest of all stakeholders to ensure that electronic displays are sufficiently bright to ensure clear legibility, while at the same time avoiding a display that is overly bright.

2. Technology utilized to ensure appropriate brightness.

Most electronic displays are designed to produce sufficient brightness to ensure clear legibility during daylight hours. However, daytime brightness settings are usually inappropriate for night-time viewing. The following general methods are used to dim an electronic display for appropriate night-time viewing:

1. ***Manual Dimming.*** Using this method, the sign operator dims the display in response to changing ambient light conditions.

2. ***Scheduled Dimming.*** Sunset-sunrise tables allow an electronic display to be programmed to dim at the same time that the sun sets and rises. This method is generally acceptable, but is more effective when used as a backup to automatic dimming controls capability, such as photocell technology.

3. ***Photocell Technology.*** An electronic display that utilizes photocell technology can automatically dim as light conditions change. A photocell sensor alerts the display to adjust brightness according to ambient light conditions.

Most electronic displays are designed to produce sufficient brightness to ensure clear legibility during daylight hours. However, daytime brightness settings are usually inappropriate for night-time viewing.

3. Recommended brightness standards.

ISA commissioned Dr. Ian Lewin of Lighting Sciences, Inc. to develop brightness criteria for on-premise electronic displays. Dr. Lewin is a leading lighting expert with over thirty years experience in the lighting industry.

Dr. Lewin recommended the development of brightness criteria based on the Illuminating Engineering Society's (IES) well-established standards pertaining to light trespass, IES Publication TM-11-00. The theory of light trespass is based on the concept of determining the amount of light that can spill over (or "trespass") into an adjacent area without being offensive.

As a result of his research, Dr. Lewin recommended two different brightness settings based on whether the EMC was located in an area of high or low ambient light. After field testing and utilizing Dr. Lewin's recommendations, it was determined that using the more conservative recommendation is appropriate in areas of both low and high ambient light. In order to simplify Dr. Lewin's recommendations, and to take a more reasonable approach to ensure that EMC's are sufficiently visible but not overly bright, it is recommended that EMC's not exceed 0.3 footcandles over ambient lighting conditions when measured at the recommended distance, based on the EMC size.

...it is recommended that EMC's not exceed 0.3 footcandles over ambient lighting conditions when measured at the recommended distance, based on the EMC size.

4. Brightness measurement methodology.

There are two generally accepted measures of brightness in the sign industry; illuminance and luminance. Illuminance, the preferred method, is a measure of the amount of light intercepting an object at a given distance from a light source and is measured in footcandles or its metric equivalent, lux. Illuminance can be measured with a footcandle meter (also know as a luxmeter), which are relatively inexpensive ($100-1000) and commonly available. The footcandle meter should be accurate to two decimal points for accurate measurements. The second method, luminance, is an absolute measure of the amount of brightness that is being emitted from a light source and is usually measured in candelas per square meter, also known as "nits." Luminance can be measured by use of a "nit gun", which are expensive (~$3,000) and difficult to procure. The preferred method of measurement is illuminance using a footcandle meter because a measure of luminance fails to account for ambient light conditions.

Recommended Legislative Language

1. **Electronic Message Center (EMC) Criteria:** The night-time illumination of an EMC shall conform with the criteria set forth in this section.

A. **EMC Illumination Measurement Criteria:** The illuminance of an EMC shall be measured with an illuminance meter set to measure footcandles accurate to at least two decimals. Illuminance shall be measured with the EMC off, and again with the EMC displaying a white image for a full color-capable EMC, or a solid message for a single-color EMC. All measurements shall be taken perpindicular to the face of the EMC at the distance determined by the total square footage of the EMC as set forth in the accompanying Sign Area Versus Measurement Distance table.

B. **EMC Illumination Limits:** The difference between the off and solid-message measurements using the EMC Measurement Criteria shall not exceed 0.3 footcandles at night.

C. **Dimming Capabilities:** All permitted EMCs shall be equipped with a sensor or other device that automatically determines the ambient illumination and programmed to automatically dim according to ambient light conditions, or that can be adjusted to comply with the 0.3 footcandle measurements.

D. **Definition of EMC:** A sign that utilizes computer-generated messages or some other electronic means of changing copy. These signs include displays using incandescent lamps, LEDs, LCDs or a flipper matrix.

SIGN AREA VERSUS MEASUREMENT DISTANCE

AREA OF SIGN sq. ft.	MEASUREMENT Distance (ft.)
10	32
15	39
20	45
25	50
30	55
35	59
40	63
45	67
50	71
55	74
60	77
65	81
70	84
75	87
80	89
85	92
90	95
95	97
100	100
110	105
120	110
130	114
140	118
150	122
160	126
170	130
180	134
190	138
200	141
220	148
240	155
260	161
280	167
300	173

** For signs with an area in square feet other than those specifically listed in the table (i.e., 12 sq ft, 400 sq ft, etc), the measurement distance may be calculated with the following formula:* Measurement Distance = $\sqrt{\text{Area of Sign Sq. Ft. x 100}}$

Six STEPS:
EMC Brightness Levels

How to Measure the Brightness of an Electronic Message Center (EMC)

STEP 1

OBTAIN AN ILLUMINANCE METER.

Purchase or otherwise procure an illuminance meter. Most city/county traffic departments have an illuminance meter, which are also referred to as lux or footcandle meters (lux is the metric measure of illuminance; footcandles is the English measure of illuminance). The illuminance meter must have the ability to provide a reading up to two decimal places and must be set to read footcandles. It is preferred to have an illuminance meter with a screw-mount that allows the sensor to be mounted on a tripod. A tripod ensures that the highly sensitive sensor is held perfectly still; otherwise it may be difficult to obtain an accurate reading.

If you do not have an illuminance meter, the Konica Minolta T-10 is a high quality illuminance meter that works well. However, other less expensive illuminance meters may also provide adequate results. The International Sign Association has no affiliation with Konica Minolta.

STEP 2

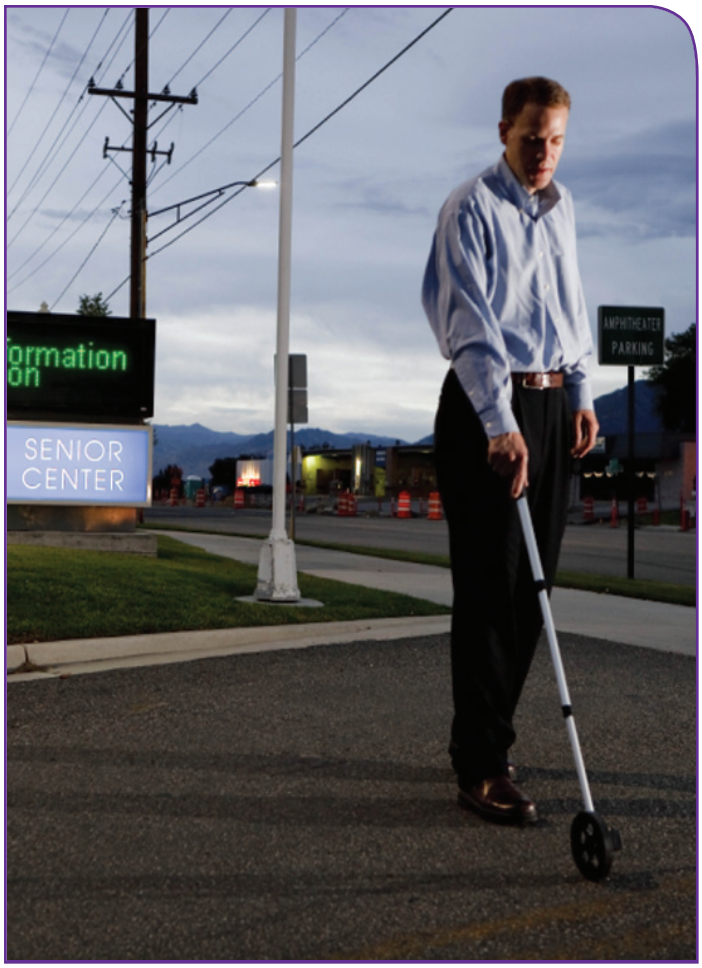
DETERMINE SQUARE FOOTAGE.

Determine the square footage of the face of the electronic message sign (EMC) by multiplying the height and width of the EMC. This information may be available in a permit application, or can be determined by physically measuring the height and width of the EMC. Do not include the sign face square footage attributable to any additional static signs associated with the EMC (if applicable).

STEP 3

DETERMINE THE MEASUREMENT DISTANCE.

Using the total square footage found in Step 2, look up the measurement distance in the table provided in the Recommended Legislative Language on page 6, to determine the distance to measure the brightness of the EMC. The distance should be measured perpendicular to the EMC sign face. The use of a measuring wheel is the most convenient way to measure the distance.



STEP 4

PREPARE THE DISPLAY FOR TESTING.

Ensure that the EMC is programmed to alternate between a solid white (or in the case of a monochrome display – the solid color of the display) message and a blank message. You may wish to have a requirement that the sign owner cooperate with testing by programming the EMC for testing upon written notice.

STEP 5

USE AN ILLUMANCE METER TO MEASURE THE BRIGHTNESS OF THE EMC.

Mount the sensor of your illuminance meter to a tripod and orient the sensor directly towards the face of the EMC at the measurement distance determined in Step 2.

STEP 5 [CONTINUED]

Ensure that the illuminance meter is set to measure footcandles up to two decimal places. As the display alternates between a solid white message and an "off" message, note the range of values on the illuminance meter. If the difference between the readings is less than 0.3 footcandles, then the brightness of the display is in compliance. If not, the display will need to be adjusted to a lower brightness level using the manufacturer's recommended procedures.

STEP 6

ENSURE THAT THE DISPLAY CAN ADJUST TO DIFFERENT AMBIENT CONDITIONS.

Inspect the sign to ensure that it incorporates a photocell or other technology to ensure that the display can adjust according to ambient lighting conditions.

As the display alternates between a solid white message and an "off" message, note the range of values on the illuminance meter. If the difference between the readings is less than 0.3 footcandles, then the brightness of the display is in compliance.

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Recommended Night-time Brightness Levels for On-Premise Electronic Message Centers