

**SUBCHAPTER E, SECTION 2.5, EXTERIOR LIGHTING  
RULES FOR ALTERNATIVE EQUIVALENT COMPLIANCE (AEC)**

**I. GENERAL**

- A. Purpose and Intent: The standards of ARTICLE 2.5 are intended to provide high quality exterior lighting to:
1. Meet the intent in Sections 1.1 and 2.1 of Chapter 25-2, Subchapter E of the Land Development Code.
  2. Protect the outdoor environment and adjacent residents by reducing light pollution (also called sky glow) and light trespass (often described as light shining across property lines).
  3. Allow for design creativity in exterior lighting and accommodate applications of new lighting technology, such as LEDs.

**II. EXTERIOR LIGHTING: ACCEPTABLE ALTERNATIVES FOR FULLY-SHIELDED OR FULL CUT OFF FIXTURES**

- A. THE FOLLOWING FIXTURE / APPLICATIONS QUALIFY AS FULLY-SHIELDED OR FULL CUT OFF UNDER SUBCHAPTER E, SECTION 2.5 LIGHTING:

1. Fully louvered or "hooded" fixtures such as bollards, step lights or pathway lights, when installed below 36 inches above grade and with fixture lumens less than 1,800.
2. Lighting which is shielded by a permanent element of a building. Examples of this application include:
  - a. Non-cut off and non-shielded fixtures installed with a fixed, external means of shielding.
3. DIRECT VIEW LIGHTING is bare bulb lighting, neon lighting or neon-like LED lighting typically used for accent lighting, lighting outlining a building or site element (includes any bare bulb installed without an enclosure or housing surrounding the bulb). DIRECT VIEW LIGHTING shall be allowed under AEC, subject to the following:
  - a. DIRECT VIEW LIGHTING shall emit no more than 250 lumens per linear foot.
  - b. Total lumen output of DIRECT VIEW LIGHTING shall be included in the maximum exempt lumen calculation and shall be subject to the limits shown above.
  - c. DIRECT VIEW LIGHTING must be turned off after curfew. Curfew hours are defined as hours from 30 minutes after close of business to 30 minutes before opening of business. Where no business exists on a site, curfew hours shall be from 1100pm to 0500am.
4. All fixtures under this section must comply with all other requirements of Chapter 25-2, Subchapter E of the Land Development Code.

**III. PERMITTED ALTERNATIVE EQUIVALENT COMPLIANCE METHODS**

- A. This section describes permitted methods for Alternative Equivalent Compliance for Chapter 25-2,

Subchapter E, Section 2.5 Exterior Lighting.

- B. For the ALTERNATIVE EQUIVALENT COMPLIANCE method, the exterior lighting is designed to comply with ONE of the following:
1. Latest adopted version of U.S. Green Building Council (USGBC) LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN (LEED) Sustainable Site Credit 8.
  2. Latest adopted version of ILLUMINATING ENGINEERING SOCIETY (IES)- INTERNATIONAL DARK SKY ASSOCIATION (IDA) MODEL LIGHTING ORDINANCE (MLO).
  3. Latest adopted version of AUSTIN ENERGY GREEN BUILDING COMMERCIAL RATING LIGHT POLLUTION REDUCTION section.
- C. Documentation for demonstrating compliance is as follows:
1. All documentation required by the selected option (USGBC LEED, IES MLO or AEGB program) shall be submitted as part of the AEC request;
  2. An Affidavit sealed by a registered Architect or Engineer certifying that the AEC proposal is in compliance with the selected option.
- D. Limitations on Use of Alternative Equivalent Compliance for Exterior Lighting
1. All luminaires located within 100 feet of a property zoned SF-5 or more restrictive zoning district shall not be eligible for AEC.
  2. The following are NOT eligible for AEC and must be full cut off (or fully shielded):
    - a. Lighting in surface parking lots, uncovered levels of structured parking (typically the top-most parking level) and related drives (whether surface or structured), roadways and similar vehicle drive areas.
    - b. Luminaires exceeding 1,800 fixture lumens, regardless of fixture type.
    - c. All building entrances and exits intended for staff or employee use (not a public entrance).
    - d. Any fixture mounted 15' above grade of finished floor elevation.

#### IV. Definitions

ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
CURFEW hours	Hours from 30 minutes after close of business to 30 minutes before opening of business. Where no business exists on a site, curfew hours shall be from 1100pm to 0500am.
DIRECT VIEW LIGHTING	Bare bulb lighting, neon lighting or neon-like led lighting typically used for accent lighting, lighting outlining a building or site element. Includes any bare bulb installed without an enclosure or housing surrounding the bulb.
FULLY SHIELDED	A luminaire with an opaque housing, opaque closed top, and no lens or lamp extending below the housing shall be deemed to comply with the FULL CUTOFF requirement of this ordinance. No photometric test report will be required and annotations of FULL CUTOFF will not be required on the

	<p>product data sheet. Any fixtures meeting this requirement shall have ZERO lumens above 90 degrees. Fully recessed downlights shall meet this qualification.</p> <p>Additionally, a luminaire may be shielded by external features of the building.</p>
IECC	International Energy Conservation Code
IES	Illuminating Engineering Society
LUMINAIRE Also LIGHT FIXTURE	A complete lighting unit consisting of a lamp or lamps and ballast(s) (when applicable) together with the parts designed to distribute the light, to position and protect the lamps, and to connect the lamps to the power supply.
DUAL OPTIC LUMINAIRE	<p>A luminaire with two separate optical compartments, for example combined uplight and downlight light distribution.</p> <p>A dual optic luminaire shall be considered fully shielded provided the following:</p> <ul style="list-style-type: none"> <li>• The non-complying portion of the luminaire is wired for control to turn off after curfew.</li> <li>• The non-complying portion of the luminaire is less than 1,800 total lumens.</li> <li>• The non-complying portion of the luminaire complies with the MAXIMUM LUMENS FROM EXEMPT LUMINAIRES</li> <li>• The downlight portion of the luminaire complies with the definition of a fully shielded luminaire and all other portions of this ordinance.</li> </ul>
TOTAL FIXTURE LUMENS	The cumulative total of initial lumens emitted by all lamps contained within a single luminaire.
USGBC	U.S. Green Building Council
LEED RATING SYSTEM	LEED (Leadership in Energy and Environmental Design) is an ecology-oriented building certification program run under the auspices of the U.S. Green Building Council (USGBC). LEED concentrates its efforts on improving performance across five key areas of environmental and human health: energy efficiency, indoor environmental quality, materials selection, sustainable site development and water savings.

<b>CUT OFF CLASSIFICATION (PRIOR TO INTRODUCTION OF B.U.G. RATING)</b>	
FULL CUTOFF	A luminaire light distribution where zero candela intensity occurs at or above an angle of 90 degrees above nadir (straight down). Additionally, the candela per 1,000 lamp lumens does not numerically exceed 100 (10%) at or above a vertical angle of 80 degrees above nadir. This applies to all lateral angles around the luminaire.
CUTOFF	A luminaire light distribution where the candela per 1,000 lamp lumens does not numerically exceed 25 (2.5%) at or above an angle of 90 degrees above nadir (straight down), and 100 (10%) at or above vertical angle 80 degrees

	above nadir. This applies to all lateral angles around the luminaire.
SEMI-CUTOFF	A luminaire light distribution where the candela per 1,000 lamp lumens does not numerically exceed 50 (5%) at or above an angle of 90 degrees above nadir (straight down), and 200 (20%) at or above 80 degrees.
NON-CUTOFF	A luminaire light distribution where there is no candela limitation in the zone above maximum candela.
BUG RATING	BUG stands for “Backlight”, “Uplight”, and “Glare.” The acronym describes the types of stray light escaping from an outdoor lighting luminaire. “B” stands for backlight, or the light directed in back of the mounting pole. “U” stands for uplight, or the light directed above the horizontal plane of the luminaire, and “G” stands for glare, or the amount of light emitted from the luminaire at angles known to cause glare.

<b>LIGHTING ZONES</b>	
LZ1	<i>Areas with intrinsically dark landscapes.</i> Examples are national parks, areas of outstanding natural beauty, or residential areas where inhabitants have expressed a strong desire that all light trespass be strictly limited.  Classification in this zone is highly unlikely and requires directors written approval.
LZ2	<i>Areas of low ambient brightness.</i> These may be outer urban and rural residential areas. Roadways may be lighted to typical <i>residential</i> standards
LZ3	<i>Areas of medium ambient brightness.</i> These will generally be urban residential areas. Roadways will normally be lighted to typical traffic route standards.
LZ4	<i>Areas of high ambient brightness.</i> Normally these are urban areas having both residential and commercial use and experiencing high levels of night time activity.  Classification in this zone is highly unlikely and requires directors written approval.