

Subchapter 13. Exterior Lighting Standards

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SUBCHAPTER 13. EXTERIOR LIGHTING STANDARDS

13.1 PURPOSE

Lighting standards are established to regulate outdoor lighting in order to reduce light pollution and mitigate glare and light trespass for the safe, orderly, and healthful development of the City. These standards also promote the health, safety, morals, and general welfare of the city and promote energy conservation while providing a sense of safety and security.

13.2 APPLICABILITY

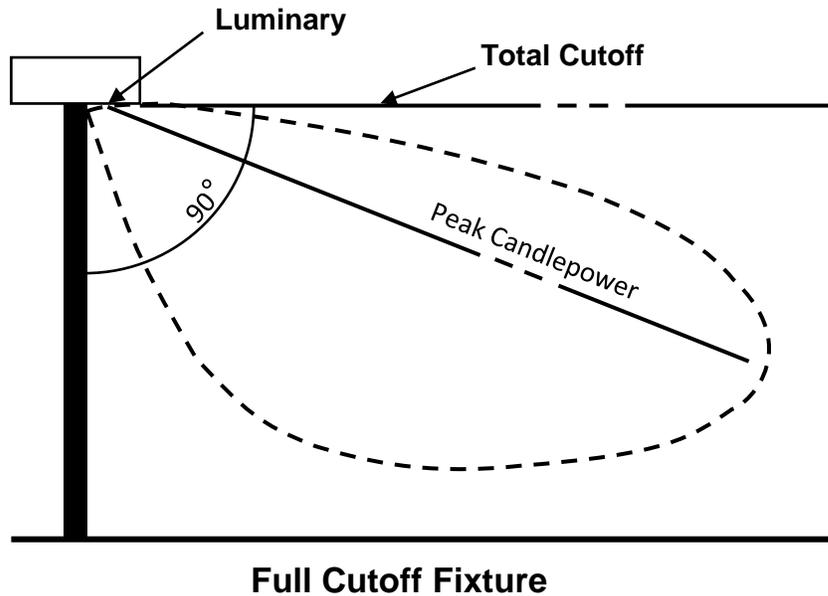
The provisions and standards set forth in this Subchapter shall apply to all developments within the City and ETJ. At no time shall light sources be oriented to direct light toward a neighboring property, right-of-way, or be installed in a manner which may otherwise be considered a nuisance.

13.3 LIGHTING DESIGN REQUIREMENTS

Lighting shall be used to provide safety while accenting key architectural elements and emphasizing landscape features. Light fixtures shall be treated as an integral design element that complements the overall design of a project. This may be accomplished through style, material, or color. All lighting fixtures designed or placed so as to illuminate any portion of a site shall meet the following requirements.

13.3.1 Fixtures / Luminaries

- A. Light sources shall be completely concealed from above and on all sides in an opaque housing and shall be oriented in a direction that minimizes visibility from streets or adjacent properties. All lighting fixtures shall be full cutoff in design to direct light downward and minimize the amount of light spilled into the night sky and onto adjacent properties, unless otherwise permitted within this Subchapter.
- B. Lighting shall be oriented so it does not direct glare or illumination onto streets in a manner that may distract or interfere with the vision of drivers, cyclists, or pedestrians on such streets.
- C. Light poles and fixture heads shall be generally consistent in style and color throughout a development to establish uniformity. Deviations may be approved by the Planning Director when a specific theme or increased energy efficiency is desired.



13.3.2 Fixture Height

- A. Lighting fixtures may be up to 30 feet in height within an on-site parking area and may be up to 15 feet in height within a pedestrian area. However, on sites larger than one acre, parking area lighting that is located more than 100 feet from any property line may be up to 35 feet in height.
- B. Lighting fixtures located within 50 feet of any property that has a residential zoning district or a residential use shall not exceed 15 feet in height.

13.3.3 Light Source / Lamp

All lighting, including parking lot lighting, shall utilize energy efficient technology to the greatest extent practical, including the use of solar powered and light emitting diode (LED) lamps. Where more traditional lighting is desired, the use of incandescent, fluorescent, metal halide, and color corrected high-pressure sodium lamps are allowed. In order to maintain uniformity within a site, the same light source or lamp shall be used for the same or similar types of lighting throughout a site and overall development, unless more energy efficient technology is proposed, and only when approved by the Planning Director.

13.3.4 Mounting

Lighting fixtures shall be mounted in such a manner that the cone of light is contained on-site and does not cross any property line of the site where practically feasible.

13.3.5 Limit Lighting to Periods of Activity

When a nonresidential development is adjacent to a conforming residential zoning district or residential land use, sensor technologies, astronomical time clocks, or other means to activate lighting during times when it is needed may be required by the Planning Director to promote compatibility between the different land uses.

13.3.6 Exterior Lighting Controls

Lighting not designed for dusk-to-dawn operation shall be controlled by either a combination of a photosensor or an astronomical time switch. Lighting designed for dusk-to-dawn operation shall be controlled by an astronomical time switch or photosensor. All time switches shall be capable of retaining programming and the time setting during loss of power for a period of at least 10 hours.

13.4 NONCONFORMING FIXTURES

Except where otherwise required, all lighting fixtures existing and legally installed and operative before the effective date of this Code are exempt from the requirements of this Subchapter. Whenever a nonconforming fixture is replaced or removed, or the average level of illumination is modified to a higher level, the replacement fixture or level of illumination shall meet the requirements of this Subchapter.

13.5 ILLUMINATION REQUIREMENTS

- A. Subject to the limits below, all exterior site lighting shall be designed so that the level of illumination, as measured in foot-candles (fc), at any one point meets the requirements in the following table.

Table 13.5

Type of Lighting	Illumination Level		
	Minimum	Average	Maximum
Architectural Lighting	0.0	1.0	5.0
Building Entrance	1.0	5.0	15.0
Vehicular Canopy Area Lighting (and Structured Parking)	2.0	10.0	15.0
On-Site Parking Area	0.2	1.5	10.0
Walkways, Landscape or Decorative Lighting	0.0	1.0	5.0

- B. Minimum and maximum foot-candle levels are measured from the pavement within the lighted area. The average level is the overall, generalized ambient light level throughout the site, and shall be measured as a not-to-exceed value calculated using only the area of the site intended to receive the illumination. The minimum light level may be reduced by twenty percent (20%), by the Planning Director, if it is determined to adversely impact the development or adjacent properties. Calculation zones for the types of lighting identified in Table 13.5 shall extend ten (10) feet beyond the property line where required and shall adhere to the calculation zone methodology as provided below:

1. An architectural lighting calculation zone shall be measured at the light source(s) around the perimeter of the building and extended ten (10) feet horizontally from the light fixture(s).
 2. A building entrance calculation zone shall be measured at a minimum of fifteen (15) feet from the building entrance(s), and includes any areas underneath awnings or building extensions covering pedestrian plazas and/ or walkways.
 3. A vehicular canopy area calculation zone shall be measured at ten (10) feet outwardly extended around the perimeter of the canopy.
 4. An on-site parking area calculation zone shall be measured only within the paved parking area, inclusive of drive aisles and landscape islands, peninsulas and medians contained within the paved parking area.
 5. A calculation zone for walkways, landscaping or decorative lighting shall be measured as follows:
 - a. Walkway lighting shall be measured within the dimensions of the walkway.
 - b. Landscape lighting shall be measured five (5) feet from the proposed light fixture(s).
 - c. Decorative lighting, not included within any of the calculation zones above, shall be measured five (5) feet from the proposed light fixture(s). Decorative lighting includes pedestrian scale lighting not attached to building elevations or included within the on-site parking area calculations.
- C. The maximum illumination permitted at any lot line, without crossing such lot line, is set forth below. Where a development is unified with shared parking, the maximum illumination levels will apply only to the exterior lot lines of the projects (any interior lot lines shall be exempt from this paragraph). The calculation zone(s) shall be measured ten (10) feet beyond the property lines in order to ensure excessive light spillage does not occur.
1. The maximum illumination at any lot line adjacent to any residentially zoned property, or property with a residential use, is 0.5 foot-candles.
 2. The maximum illumination at any lot line adjacent to a street is 5.0 foot-candles.

13.6 SPECIFIC LIGHTING REQUIREMENTS

13.6.1 Architectural Lighting

- A. Wall-mounted flood lamps, including wall pack lighting or similar security lighting, shall be completely shielded on the top and on all sides to minimize any off-site visibility and to focus light to the ground surrounding the structure.
- B. Fixtures used to accent building architectural features and landscaping shall be full cutoff light fixtures that are downcast in order to minimize light spill into the night sky.
- C. For art features and flag illumination, luminaires may cast light upwards, but must be shielded so that light illuminates only (1) the area immediately around the art, flag pole, or other flag supporting structure, or (2) the projection from a structure on which the flag or art is mounted.

13.6.2 Canopy Area Lighting

- A. Except as provided in subsection (B) below, all development that incorporates vehicular canopy area lighting shall use fixtures that are recessed into the canopy ceiling. The fixture covers shall be flush with the surface of the canopy ceiling and provide a cutoff or shielded light distribution.
- B. As an alternative to recessed canopy ceiling lights, indirect lighting may be used. In this case, light is directed upward onto a canopy and then reflected down from the underside of the canopy. Light fixtures shall be shielded so that direct illumination is focused exclusively on the ceiling of the canopy and does not spill into the sky.
- C. Lights may not be mounted on the top or sides of the canopy. In addition, the exterior sides of the canopy may not be illuminated.
- D. Automated teller machines (ATM) are permitted to use up to 15 foot-candles of illumination when located underneath a canopy.

13.6.3 Pedestrian Lighting

- A. Within multi-family and condominium developments, pedestrian scale lighting shall be provided generally at 100' intervals along internal pedestrian corridors and walkways to guide pedestrians to buildings, gathering places and parking areas. Lighting may be provided through freestanding fixtures such as decorative lamp poles, bollard lights or architectural building mounted fixtures that do not exceed 15' in height. Parking lot lighting may count towards meeting the requirement when the walkway is illuminated.
- B. Within nonresidential common developments, such as commercial strip centers with outlining pad sites, pedestrian scale lighting shall be provided generally at 100' intervals along internal pedestrian corridors and walkways which connect two or more building entrances. Lighting may be provided through freestanding fixtures such as decorative lamp poles, bollard lights or architectural building mounted fixtures that do not exceed 15' in height. Parking lot lighting may count towards meeting the requirement when the walkway is illuminated.
- C. Fixtures shall be placed in a manner to best illuminate walkways and sidewalks, as approved by the Planning Director.
- D. Light fixtures that exceed 15' in height shall be shielded and full cutoff in design. Fixtures that are 15' or less in height shall be shielded to minimize light spill into the sky.
- E. Alternative luminaries may be used as approved by the Planning Director.

13.6.4 ATM Lighting

Lighting for automated teller machines (ATM) shall be in accordance with the Texas Finance Code, Section 59.307, as amended. However, these facilities shall not have lighting that exceeds fifteen foot-candles.

13.6.5 Structured Parking Lighting

Pedestrian and vehicular entrances shall utilize the building entrance light levels per Table 13.5. Vehicular parking shall utilize the vehicular canopy area lighting when such parking is located under a roof or canopy. The top level of all parking structures shall utilize the standard on-site parking lighting requirements per Table 13.5. All other applicable lighting standards provided in this Subchapter shall apply.

13.7 PROHIBITED LIGHT SOURCES

Except as otherwise provided, the following light sources and light fixtures shall not be used where the light emitted is visible from adjacent lots or streets:

1. High-pressure sodium, low-pressure sodium, mercury vapor, or neon light sources.
2. Cobra-head or similar type of fixtures having dished or drop down lenses.
3. Searchlights or other high-intensity narrow-beam fixtures.
4. Lighting fixtures that have flashing, rotating, moving, pulsing, or alternating colored sources, except typical holiday lighting used between November 1 and January 31.

13.8 STREET LIGHTS

An illumination plan identifying the location, type, height, and intensity of proposed streetlights shall be included in the subdivision and construction plans and shall conform to the Engineering Design Manual.

13.9 ATHLETIC FIELD LIGHTING

The installation of athletic field lighting requires the approval of City Council and, except as otherwise provided, shall comply with the following provisions and be evaluated subject to their context. Areas ancillary to athletic fields, whether public or private, shall provide lighting for parking and pedestrian areas in order to maintain safety, cleanup, and maintenance, with such lighting subject to Section 13.5 of this Subchapter.

13.9.1 Fixtures / Luminaries

- A. All fixtures and luminaries shall be constructed with a die-cast aluminum housing, mounted on galvanized steel poles set on an engineered concrete base, and be maintained in good working condition in conformity with the provisions of this Code.
- B. Only full cutoff or shielded, directional light fixtures shall be permitted. Lighting shall be oriented not to direct illumination or glare onto streets in a manner that may distract or interfere with the vision of drivers, cyclists, or pedestrians on such streets.

1. Shielded, directional fixtures refers to a technique or method of construction which causes all of the light emitted to be directed to the surface or area to be illuminated in such a way that the emanating source of light is not visible from any angle except those angles that exist between the fixture and the target to be illuminated. The emanating source shall not be visible from any adjacent properties or roadways to minimize light pollution.
2. Lamp systems utilizing 1000 to 1500 watts, or an equivalent, shall be permitted. Only incandescent, fluorescent, LED, or metal halide lamps may be used.
3. Utility lines providing electricity to lights shall be placed underground. Where overhead utility lines exist, transformers shall be pad mounted and screened.

13.9.2 Fixture Height

- A. The maximum height for any athletic field lighting fixtures shall be not more than 60 feet.
- B. Lighting fixtures shall not exceed 15 feet in height when located within 50 feet of any residential zoning district or residential land use.

13.9.3 Lighting Period

- A. The illumination of any athletic field or recreational facility, public or private, only is allowed between sunrise and 10:00 p.m.
- B. Athletic field lights require the installation of an on-site control switch, with a timer(s), to allow lights to be operated at the site and to allow individual fields to be lighted separately.

13.9.4 Illumination Requirements

- A. Where the predominant use is recreation and/or team practices, all athletic field lighting shall be designed so that the level of illumination, as measured in foot-candles (fc), at any point complies with the following table.

Table 13.9.4 Athletic Field Illumination

Type of Lighting	Illumination Level	
	Average	Maximum
Athletic Field Lighting	25.0	30.0

- B. The maximum illumination at any lot line adjacent to, or across the street from, any property with a residential zoning designation or residential use is 0.5 foot-candles.
- C. The maximum illumination at any property line adjacent to a street is 5.0 foot-candles.

13.10 Submittal Requirements

All submissions shall contain the items specified in this section, and any other information the Planning Director may request as necessary to complete the review process and confirm compliance with this subchapter:

- A. For all site development applications: provide photometric plan for a typical luminaries used showing candela tabulation as defined by Illuminating Engineering Society of North America (IESNA) recommendations.
- B. In addition to the requirements set forth in Section 13.10(A), the following is required for athletic fields: a site plan, drawn to a scale of one-inch equaling twenty feet showing buildings, landscaping, parking, and all proposed exterior fixtures including lamps, supports, reflectors, and other devices.