

## Chapter 16.43

### OUTDOOR LIGHTING STANDARDS

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#### 16.43.010 Purpose.

The purpose of this section is to provide regulations for outdoor lighting that will:

- A. Regulate uses of outdoor lighting for nighttime safety, utility, security, productivity, enjoyment and commerce.
- B. Minimize glare, particularly in and around public rights-of-way.
- C. Minimize light trespass, so that each owner of property does not cause unreasonable light spillover to other property.
- D. Preserve the night sky for astronomy and enjoyment.
- E. Conserve energy and resources to the greatest extent possible.

#### 16.43.020 Definitions

The following words, phrases and terms as used in this chapter shall have the following meaning:

- A. Artificial Sky Glow. The brightening of the night sky attributable to man made sources of light.
- B. Candela. The unit of luminous intensity of a lighting source emitted in a given direction.
- C. Curfew. A time each night after which certain electric illumination must be turned off or reduced in intensity.

**D. Glare.** Light that causes visual discomfort, annoyance or disability, or a loss of visual performance.

**E. Landscape Lighting.** Luminaires mounted in or at grade (not to exceed 3 feet above grade) and used solely for landscape rather than area lighting, or fully shielded luminaires mounted in trees and used solely for landscape or Facade lighting.

**F. Light Trespass.** Light flowing across the property boundary. See Figure 16.43.1 for illustration.

**G. Lumen.** The unit of luminous flux: a measure of the amount of light emitted by a lamp.

**H. Luminaire.** A complete lighting unit consisting of one or more electric lamps, the lamp holder or holders, reflector, lens, diffuser, ballast, and/or other components and accessories.

**I. Luminous Flux.** A measure of the total light output from a source, the unit being the lumen.

**J. Mounting Height.** The vertical distance between the lowest part of the luminaire and the ground surface directly below the luminaire. See Figure 16.43.2 for illustration.

**K. Photometric Test Report.** A report by an independent testing laboratory or one certified by the National Institute of Standards and Technology (NIST) describing the candela distribution, shielding type, luminance, and other optical characteristics of a specific luminaire.

**L. External Point of Service.** An outdoor service which a business provides some service to a customer, such as drive up food service, a bank transaction, or the like

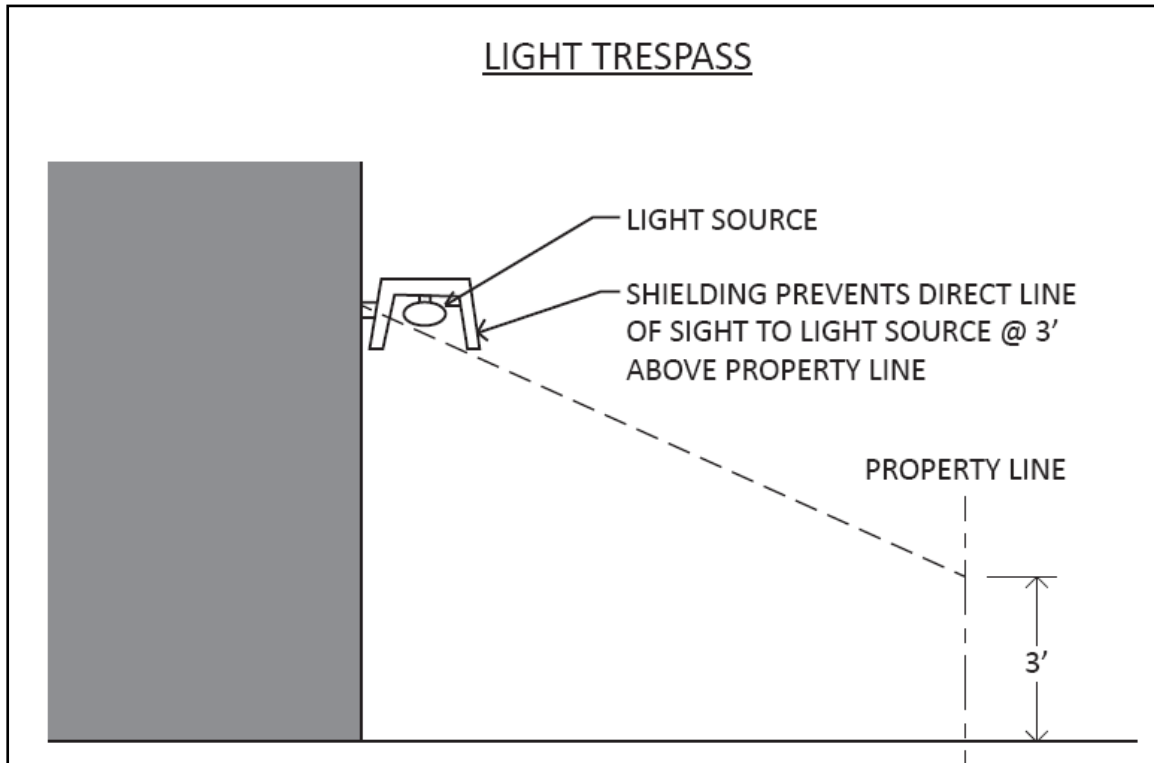
**M. Shielding.** A device or technique for controlling the distribution of light. Four levels of shielding are defined as follows:

- 1. Fully Shielded.** A luminaire emitting no luminous flux above the horizontal plane;
- 2. Shielded.** A luminaire emitting less than 2.0 percent of its luminous flux above the horizontal plane;
- 3. Partly Shielded.** A luminaire emitting less than 10 percent of its luminous flux above the horizontal plane;
- 4. Unshielded.** A luminaire that may emit its flux in any direction.

**N. Spill Light.** Lighting from a lighting installation that falls outside of the boundaries of the property on which the installation is sited.

**O. Temporary Lighting.** Lighting installed with temporary wiring and operated for less than 60 days in any calendar year.

**Figure 16.43.1: Light Trespass**



**16.43.030 Applicability.**

The outdoor lighting standards in this section apply to the following:

**A. New uses, buildings, and major additions or modifications:**

- 1.** For all proposed new land uses, developments, buildings, and structures that require a building permit, all outdoor lighting fixtures shall meet the requirements of this Code.
- 2.** All building additions or modifications of fifty (50) percent or greater in terms of additional dwelling units, gross floor area, or parking spaces, either with a single addition or cumulative additions, shall meet the requirements of this Code for the entire property, including previously installed and any new outdoor lighting.

**B.** Minor additions. Additions or modifications of less than fifty (50) percent to existing uses, in terms of additional dwelling units, gross floor area, or parking spaces, shall meet the requirements of this Code with regard to shielding and lamp type for all new lighting.

#### **16.43.040 Lighting Zones.**

**A.** Zoning districts designated for residential uses (R-1, R-1.5 and R-2) are designated Lighting Zone One (LZ 1). All other zoning districts are designated Lighting Zone Two (LZ 2).

**B.** The designated Lighting Zone of a parcel or project shall determine the limitations for lighting as specified in this ordinance.

**Table 16.43.040 Lighting Zone descriptions**

<b>Zone</b>	<b>Ambient Illumination</b>	<b>Representative Locations</b>
LZ 1	Low	Rural areas, low-density urban neighborhoods and districts, residential historic districts. This zone is intended to be the default for residential areas.
LZ 2	Medium	High-density urban neighborhoods, shopping and commercial districts, industrial parks and districts. This zone is intended to be the default condition for commercial and industrial districts in urban areas.

#### **16.43.050 Exempt Lighting.**

The following luminaires and lighting systems are exempt from the requirements of this Section.

**A.** Externally illuminated signs in conformance with provisions in section 16.42.040 of this code.

**B.** Internal lighting for signs in conformance with provisions in section 16.42.040 of this code.

**C.** Temporary lighting for theatrical, television, and performance events.

- D.** Lighting in swimming pools and other water features governed by Article 680 of the National Electrical Code.
- E.** Code-required exit signs.
- F.** Code-required lighting for stairs and ramps.
- G.** Lighting required and regulated by the Federal Aviation Administration, U.S. Coast Guard, or other federal, state, or county agency.
- H.** Interior lighting.
- I.** Temporary lights for emergency public or private utility maintenance or public safety.
- J.** Lighting fixtures existing prior to this ordinance not exceeding 520 lumens.

#### **16.43.060 Prohibited Light and Lighting.**

- A.** All outdoor light sources, except street lights, shall be shielded or installed so that there is no direct line of sight between the light source or its reflection at a point 3 feet or higher above the ground at the property line of the source. Light that does not meet this requirement constitutes light trespass. Streetlights shall be fully shielded. However, the applicant is permitted to have some unshielded lighting if lumens are within the limits of Table 16.43.070 below.
- B.** The following lighting systems are prohibited from being installed or used except by special use permit:
  - 1.** Aerial Lasers.
  - 2.** "Searchlight" style lights.
  - 3.** Other very intense lighting, defined as having a light source exceeding 5200 lumens.

#### **16.43.070 Luminaire Lamp Lumens, Shielding, and Installation Requirements.**

- A.** All outdoor lighting shall comply with the limits to lamp wattage and the shielding requirements in Table 16.43.070 per the applicable Lighting Zone. These limits are the upper limits. Good lighting design will usually result in lower limits.

**B.** The city may accept a photometric test report, lighting plan, demonstration or sample, or other satisfactory confirmation that the luminaire meets the requirements of the shielding classification.

**C.** Such shielded fixtures must be constructed and installed in such a manner that all light emitted by the fixture complies with the specification given. This includes all the light emitted by the fixture, either directly from the lamp or by a diffusing element, or indirectly by reflection or refraction from any part of the fixture. Any structural part of the fixture providing this shielding must be permanently affixed.

**D.** All canopy lighting must be fully shielded. However, indirect upward light is permitted under an opaque canopy provided that no lamp or vertical element of a lens or diffuser is visible from beyond the canopy and such that no direct upward light is emitted beyond the opaque canopy.

**E.** Landscape features shall be used to block vehicle headlight trespass while vehicles are at an external point of service (i.e. drive-thru aisle).

**F.** All facade lighting must be restricted to the facade surface. The margins of the facade shall not be illuminated. Light trespass is prohibited.

**Table 16.43.070 – Luminaire Maximum Lumens and Required Shielding**

<b>Lighting Zone</b>	<b>Fully Shielded</b>	<b>Shielded</b>	<b>Partly Shielded</b>	<b>Unshielded</b> (Shielding is highly encouraged. Light trespass is prohibited.)
LZ 1	2600 lumens or less	800 lumens or less	None Permitted	Low voltage landscape lighting and temporary holiday lighting.
LZ 2	7800 lumens or less	1600 lumens or less	800 lumens or less	Landscape and facade lighting 1600 lumens or less; ornamental lights of 800 lumens or less.

#### **16.43.080 Height Limits.**

Pole and surface-mounted luminaires under this section must conform with Section 16.43.070.

**A.** Lighting mounted onto poles or any structures intended primarily for mounting of lighting shall not exceed a mounting height of 40% of the horizontal distance of the light pole from the property line, nor a maximum height according to Table 16.43.080, whichever is lower. The following exceptions apply:

1. Lighting for residential sports courts and pools shall not exceed 15 feet above court or pool deck surface.
2. Lights specifically for driveways, and then only at the intersection of the road providing access to the site, may be mounted at any distance relative to the property line, but may not exceed the mounting height listed in Table 16.43.080.
3. Mounting heights greater than 40% of the horizontal distance to the property line but no greater than permitted by Table 16.43.080 may be used provided that the luminaire is side-shielded toward the property line.
4. Landscape lighting installed in a tree. See the Definitions section.
5. Street and bicycle path lights.

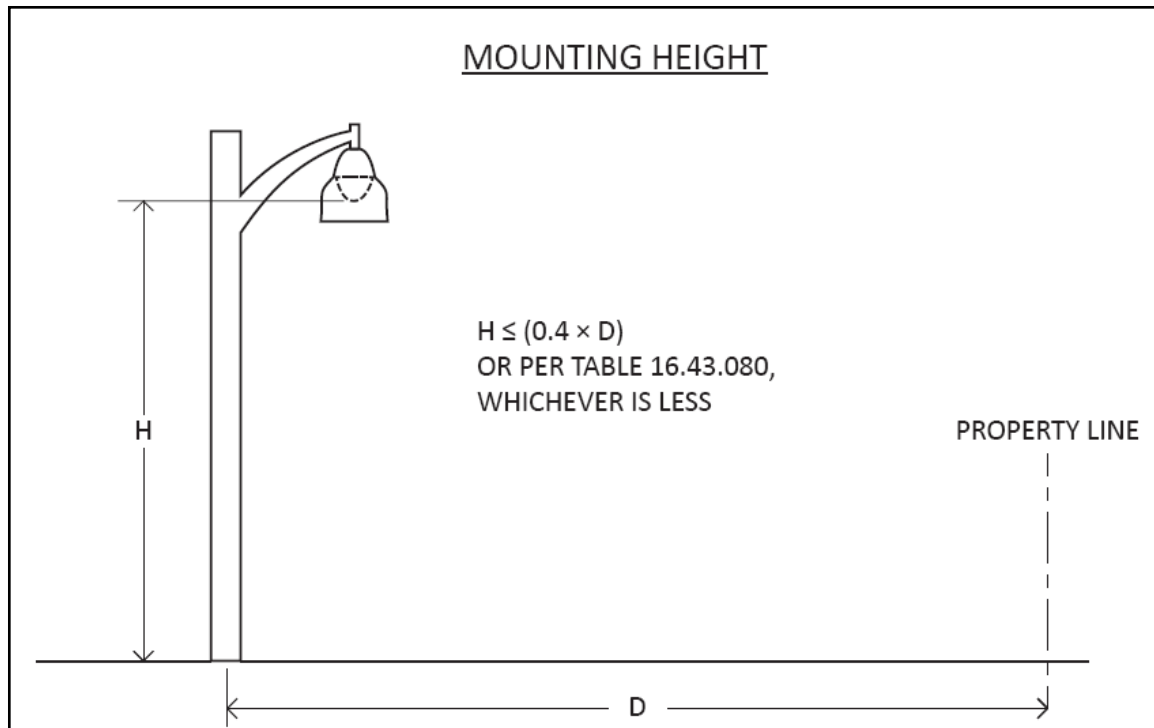
**B.** Lighting mounted onto buildings or other structures shall not exceed a mounting height greater than 4 feet higher than the tallest part of the building or structure at the place where the lighting is installed, nor higher than 40% of the horizontal distance of the light from the property line, whichever is less. The following exceptions apply:

1. Lighting attached to single family residences shall not exceed the height of the eave. Lighting for driveways shall conform to Table 16.43.080.
2. Lighting for facades may be mounted at any height equal to or less than the total height of the structure being illuminated regardless of horizontal distance to property line.
3. For buildings less than 40 feet to the property line, including canopies or overhangs onto the sidewalk or public right of way, luminaires may be mounted to the vertical facade or the underside of canopies at 16 feet or less.
4. The top exterior deck of parking garages should be treated as normal pole mounted lighting rather than as lights mounted to buildings. The lights on the outside edges of such a deck must be side shielded to the property line.

**Table 16.43.080 – Maximum Lighting Mounting Height in Feet**

<b>Lighting Zone</b>	<b>Lighting for Driveways, Parking and Transit</b>	<b>Lighting for Walkways, Plazas and other Pedestrian Areas</b>	<b>All Other Lighting</b>
LZ 1	35.0	18.0	8.0
LZ 2	37.5	18.0	15.0

**Figure 16.43.2: Mounting Height**



#### **16.43.090 Lighting Controls**

The city strongly recommends the use of timers and/or motion detectors on outdoor lighting, and that motion detectors be set to minimize unnecessary activation. For example, motion detectors for entryway or driveway lights should not activate for off-site pedestrians or cars.

#### **16.43.100 Exceptions to Standards.**

**A.** Exceptions to the lighting standards in this section may be approved by the Planning Director. Lighting systems not complying with the technical requirements of this ordinance but consistent with the intent of the ordinance may be approved for the following:

1. Sport fields.
2. Construction lighting.
3. Industrial lighting for hazardous areas where the heat of the lighting fixture may cause a dangerous situation.
4. National and State Flag lighting with spotlights greater than 450 lumens.

**B.** To obtain such approval of an exception, applicants shall demonstrate that the proposed lighting installation:



1. Has received every reasonable effort to mitigate obtrusive light and artificial sky glow, supported by a signed statement from a registered engineer or by a lighting certified professional describing the mitigation measures.
2. The Planning Director shall review each such application. Approval may be granted if, upon review, the Planning Director believes that the proposed lighting will not create unwarranted glare, sky glow, or light trespass.

#### **16.43.110 Lighting Plan Required**

A lighting plan shall be submitted with the development or building permit application and shall include:

- A.** A site plan showing the location of all buildings and building heights, parking, and pedestrian areas.
- B.** The location and height (above grade) of all proposed and existing luminaires on the subject property.
- C.** Luminaire details including type and lumens of each lamp, shielding and cutoff information, and a copy of the manufacturer's specification sheet for each luminaire.
- D.** Control descriptions including type of control (time, motion sensor, etc.), the luminaire to be controlled by each control type, and the control schedule when applicable.
- E.** Any additional information necessary to demonstrate compliance with the standards in this section. (Ord.1338, 2010)