

7.5 Lighting

7.5.1 Purpose

It is recognized that naturally dark landscapes and star-filled skies are valued by many, and dark night skies provide outdoor recreation opportunities that support local economic development. Furthermore, poor lighting practices in outdoor lighting waste energy, hamper the reasonable use and enjoyment of property and can endanger the public welfare by producing unnecessary glare.

Accordingly, it is the intent of this Ordinance to encourage lighting practices and systems which will minimize light pollution and light trespass, and conserve energy while providing for nighttime safety, utility and productivity.

7.5.2 Applicability

- A. **General Applicability:** These standards shall apply to all outdoor lighting, including but not limited to search, spot, or floodlights for: buildings and structures, recreational areas, parking lot lighting, landscape lighting, and other outdoor lighting. Additionally, the provisions of this code apply to the construction, alteration, movement, enlargement, replacement and installation of outdoor lighting throughout the City of Page, Arizona.
- B. **Incorporation by Reference:** The provisions of Arizona Revised Statutes Title 49, Chapter 7, Light Pollution, §49-1101 et seq., are hereby incorporated by reference.
- C. **Conflicting Regulations:** In the event of conflict between the regulations set forth in this ordinance and any other regulations applicable to the same area, the more stringent limitation or requirement shall govern.

7.5.3 Exemptions

- A. Emergency lighting used by police, firefighting or medical personnel, or at their direction, is exempt from all requirements of this ordinance so long as an emergency situation exists.
- B. Underwater lighting of swimming pools, fountains and similar water landscape features.
- C. Outdoor lighting in which light is produced directly by the regulated combustion of fossil fuels in enclosed housings, such as gas lamps, lanterns and fire pits, but not inclusive of open fires.
- D. ~~The lighting of flags and flagpoles, provided that such lighting is designed and installed such that its illumination is in a top-down fashion.~~
- E. Any lighting whose operation is dynamically controlled by a proximity- or motion-sensing switch and which is extinguished within 15 minutes of being activated. Any lighting required by law of a superior jurisdiction.

- F. Temporary installations of lighting permitted according to the provisions of Section 7.5.10.

7.5.4 Non-Residential Lighting

The following standards apply to the outdoor lighting of all non-residential facilities except as provided elsewhere in this ordinance:

- A. **Mounting Height:** The height of any luminaire or illumination source shall not exceed 20 feet.
- B. **Light Trespass:** Lighting installations shall be designed and installed so as to not create conditions of light trespass on any other property.
- C. **Shielding:** Luminaires shall be installed aimed downward and fully shielded to reduce the formation of skyglow.
- D. **Color:** The rated correlated color temperature (CCT) of light sources shall not exceed 3000K.
- E. **Curfew:** All outdoor lighting shall be extinguished at 10:00 p.m., or within one hour of the close of business or end of normal operating hours of a facility, whichever is later.
- F. **Wall Packs:** The use of unshielded wall pack luminaires in any application is prohibited.
- G. **Prohibited Lighting Sources:** The use of metal halide or mercury vapor light sources in any application is prohibited.

7.5.5 Recreational and Athletic Lighting

Lighting of any outdoor recreational or athletic field, court, track or range is exempted from Section 7.5.4 above provided it meets all of the following conditions:

- A. **Class of Play:** Lighting, in all cases, for all outdoor athletic fields, courts, pools, tracks or ranges shall be considered Class II according to the definition published by the Illuminating Engineering Society of North America (IESNA). Design for lighting of such facilities shall not exceed the IESNA-recommended maintained illuminance targets.
- B. **Off-site Impacts:** Every reasonable effort must be undertaken to limit the impact of recreational or athletic lighting to the formation of skyglow and light trespass through proper shielding and aiming of luminaires.
- C. **Curfew:** All lighting associated with recreational or athletic uses shall be fully extinguished within one hour of the end of play or 10:00 p.m., whichever occurs later.
- D. **Non-field Lighting:** All site lighting not directly illuminating the field, court, track or range where play occurs shall conform to all applicable standards of this ordinance.

7.5.6 Landscaping or other Lighting

All outdoor lights whose light output exceeds 1500 lumens per luminaire shall be fully shielded and installed according to manufacturer instructions such that their light emissions are not directed upward and do not result in light trespass.

7.5.7 Residential Lighting

The light emissions of exterior lighting shall be limited to 1500 lumens per luminaire unless fully shielded, and all luminaires must be installed in such a manner that prevents light trespass. The rated CCT of light sources shall not exceed 3000K.

7.5.8 Other pole-mounted lighting (parking, walkways, etc.)

All lights mounted on poles shall be directed down. The light source shall be fully shielded such that it does not create the conditions of light trespass. The rated CCT of light sources shall not exceed 3000K.

7.5.9 Searchlights

The operation of searchlights is prohibited.

7.5.10 Lighting of Right-of-Ways

Lighting of public and private rights-of-ways shall be fully shielded and comply with the following:

- A. Luminaires shall be installed and directed so as not to create the conditions of light trespass.
- B. The rated CCT of light sources shall not exceed 3000K.

7.5.11 Non-Conforming Lighting

- A. All existing outdoor lighting that was legally installed before the enactment of this ordinance and that does not conform with the provisions of this article shall be considered non-conforming. Non-conforming outdoor lighting is allowed to remain until required to be replaced pursuant to the terms of this section.
- B. Luminaires and lighting installations that do not conform to the provisions of this ordinance as of its effective date shall be allowed to remain in a non-conforming state until seven years from the effective date, at which point they must be brought into conformance.
- C. In the event that the use of a non-conforming outdoor luminaire is discontinued for six (6) months or is damaged to the point of requiring repairs for safe operation, the repaired or replacement luminaire shall comply with the provisions of this ordinance.

- D. After seven years from the effective date of this ordinance, all non-conforming luminaires and installations shall immediately be brought into conformance upon a registered written complaint.
- E. All non-conforming luminaires and lighting installations shall be brought into conformance upon replacing a failed lamp or performing any significant maintenance or upgrade to the luminaire, or expansion of the lighting installation.

7.5.12 Lighting for Temporary Uses

~~A. **Holiday lighting.** Decorative lighting in residential zones is allowed without a permit for temporary lighting during the hours from 6:00 a.m. to 10 p.m. each day in the period commencing on November 15 in any calendar year and ending on January 15 in the following calendar year. Such lighting is limited to the following:~~

- ~~1. Festoon-type, low-output lamps, limited to small individual bulbs on a string.~~
- ~~2. Low-output lamps used to internally illuminate yard art.~~
- ~~3. Flood or spot lights producing less than 2,000 lumens each, and that do not create light trespass on any other property.~~

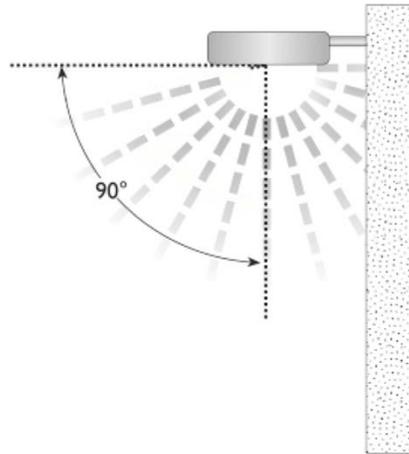
B. Permitting of other temporary lighting installations. The Zoning Administrator may grant a permit for temporary lighting if he or she finds all the following are demonstrated:

- 1. The purpose for which the lighting is proposed is not intended to extend beyond thirty (30) days;
- 2. The proposed lighting is designed in such a manner as to minimize light pollution as much as is feasible;
- 3. The proposed lighting will comply with the general intent of this ordinance; and
- 4. The permit will be in the public interest.

The Zoning Administrator shall rule on the application within five (5) business days from the date of submission of the request and notify the applicant in writing of the decision. The Community Development Director may grant one (1) renewal of the permit for an additional thirty (30) days if it is found that, because of an unanticipated change in circumstances, a renewal would be in the public interest. The Community Development Director is not authorized to grant more than one (1) temporary permit and one (1) renewal for the same property within one (1) calendar year.

7.5.13 Definitions

- A. **Fully Shielded Luminaire:** An outdoor luminaire shielded in such a manner that all light emitted by the luminaire, either directly from the lamp or indirectly from the luminaire, is projected below the horizontal plane as determined by photometric test or certified by the manufacturer. The following example shows a correctly installed fully-shielded luminaire that is aimed downward and emits no light above the horizontal plane:



- B. **Correlated Color Temperature (CCT):** A metric characterizing the color content of the light output of a lamp given in units of Kelvins (K). CCT information is available on data sheets and product packaging for all lighting sold in the United States.
- C. **Glare:** The sensation produced by a bright source within the visual field that is sufficiently brighter than the level to which eyes are adapted to cause annoyance, discomfort, or loss in visual performance and visibility; blinding light. The magnitude of glare depends on such factors as size, position, brightness of the source, and on the brightness level to which the eyes are adapted.
- D. **Lumen:** The unit used to measure the actual amount of light which is produced by a lamp. Lumen output of lamps is listed on the product packaging.
- E. **Installed Lighting:** Attached, or fixed in place, whether or not connected to a power source.
- F. **Light Pollution:** Any adverse effect of manmade light including, but not limited to, discomfort to the eye or diminished vision due to glare, light trespass, uplighting, the uncomfortable distraction to the eye, or any manmade light that diminishes the ability to view the night sky.
- G. **Light Trespass:** A nuisance condition created when the light-emitting portion of any luminaire is directly visible from any part of any other property other than the property on which the

- light is installed. This condition is not inclusive of wall wash or indirect reflection from structures or landscaping.
- H. **Luminaire:** A complete lighting assembly, inclusive of the housing, lamp, and any reflective/refractive optics, but not including the support assembly.
 - I. **Skyglow:** The overhead glow from light emitted sideways and upwards. Skyglow is caused by reflection and scattering of light by dust, water vapor, and other particles suspended in the atmosphere. A significant cause of skyglow is the use of bright white light sources for outdoor lighting applications. Skyglow reduces one's ability to view the night sky.
 - J. **Temporary Lighting:** Lighting intended for uses which by their nature are of limited duration; for example, holiday decorations, civic events, or construction projects.
 - K. **Uplighting:** Fully shielded lighting that is directed in such a manner as to shine light rays above the horizontal plane.
 - L. **Wall Pack:** Any luminaire mounted flush against a wall or similar surface designed to throw light across a large ground area. An example of a wall pack is shown below:

