



DEPARTMENT OF PLANNING & COMMUNITY DEVELOPMENT

Rose Hill Business District Exterior Lighting Requirements



All non-residential (i.e. office or retail uses), medium to high density residential, or mixed use development located in RH zones within the Rose Hill Business District, are subject to the exterior lighting requirements of Zoning Code Section 115.85. The following explains the exterior lighting requirements and submittal requirements for building permit applications.

Submittal requirements

As part of a building permit application, the applicant shall submit sufficient information in the form of an exterior lighting plan to enable the Planning Official to determine that the provisions of KZC Section 115.85 will be satisfied:

The exterior lighting plan shall include at a minimum, the following information:

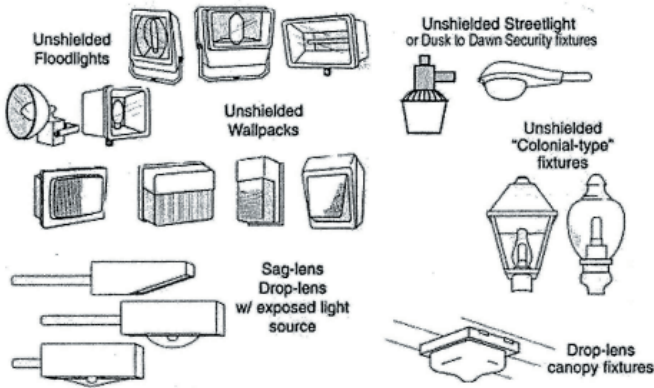
- A site plan and elevation drawings showing proposed exterior lighting on private property including:
 - location of light fixtures and fixture type
 - mounting height of all light fixtures on building exteriors, light fixtures on poles in parking or storage areas
 - luminance levels of the lighting in footcandle measurements
 - aiming point of exterior lighting fixtures
 - time lights will be turned off in evening hours
 - Identification of any security lighting
- Manufacturer specification sheets showing "fully shielded cut off" light fixtures for all proposed lighting including photometric data that meets the requirements of KZC 115.85.2
- If the subject property is located within 100' of a low density zone, in addition to the lighting plan requirements above, the applicant shall submit a computer generated photometric data and site plan grid indicating the following levels of illumination that will project onto the adjoining residential zone.
 - a) foot candle readings every 20 feet within the property or site and 15 feet beyond the property line
 - b) horizontal and vertical projection of photometric data that meets the foot candle and uniformity ratio illumination requirements of KZC Section 115.85.

Design of lighting fixtures

The following are examples of acceptable "fully shielded cut off" light fixtures as defined by the (IESNA).

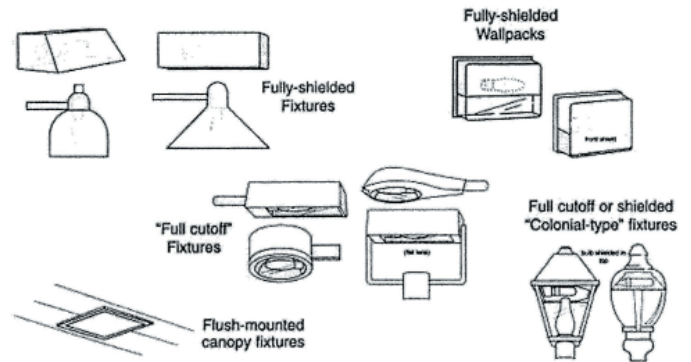
Unacceptable / Discouraged

Fixtures that produce glare and light trespass



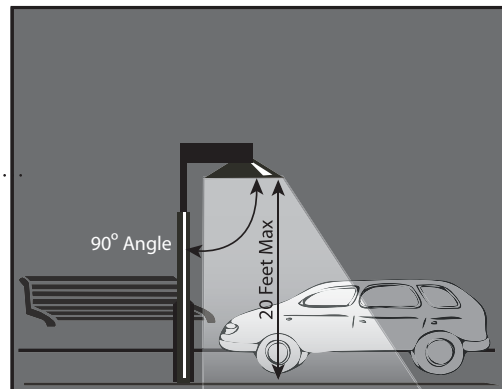
Acceptable

Fixtures that shield light source to reduce glare and light trespass and to facilitate better vision at night.



Measuring Fixture Height:

To the right is an example of how the maximum height of exterior light fixtures are measured.



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KZC Section 115.85 Lighting Regulations (0-4030 Adopted 1/3/06):

1. General requirements - All interior and exterior lighting in any zone must comply with this section.

- a. Efficient Light Sources - Energy efficient light sources shall be used in any development and use of land.
- b. State Code - The requirements of the Washington State Energy Code with respect to the selection and regulation of light sources shall be complied with.
- c. Glare from Subject Property Prohibited - The applicant shall select, place and direct light sources so that glare produced by any light source, to the maximum extent possible, does not extend to adjacent properties or to the right of way.

2. Exterior Lighting Requirements for the Rose Hill Business District

a. **General** - In addition to the requirements of Section 115.85.1 above, the following regulations contained in this section apply to all exterior lighting to be installed or modified in RH zones within the Rose Hill Business District. The intent of this section is to discourage excessive lighting and to protect low density residential zones from adverse impacts that can be associated with light trespass from non-residential and medium to high density residential development.

b. **Standards** - The following standards shall apply to all exterior lighting on buildings, all open air parking areas and equipment storage yards:

- 1) All exterior building mounted and ground mounted light fixtures for open air parking areas, including rooftop parking area light fixtures shall be directed downward and use "fully shielded cut off" fixtures as defined by the Illuminating Engineering Society of North America (IESNA), or other appropriate measure to conceal the light source from adjoining uses. Manufacturer specification sheets for the lighting fixtures including photometric data shall be included with lighting plans, and
- 2) All exterior lighting shall be turned off after business hours or 10:00 pm, whichever is earlier, leaving necessary lighting for site security. Outdoor lighting used for security purposes or to illuminate walkways, roadways, equipment yards, parking lots and building entrances may remain on after 10:00 p.m. provided the following are met:
 - a) Light fixtures are mounted to a maximum of 12' high, and
 - b) Site illumination does not exceed a uniformity ratio maximum of 15: 1, vertical illumination of .25 fc and horizontal luminance of .5 fc.
- 3) The maximum mounting height of ground mounted light fixtures in open air parking areas and equipment storage yards shall be 20'. Rooftop parking structures may have light fixtures up to 15' in height. Height of light fixtures shall be measured from the finished floor or the finished grade of the parking surface, to the bottom of the light bulb fixture.
- 4) The maximum uniformity ratio of the illumination on the site shall average 20:1.
- 5) All development proposed within 100' of a low density residential zone shall submit a lighting plan and photometric site plan for approval by the Planning Official. The plan shall meet the requirements of this section and indicate at 20 foot intervals that all site and building mounted lighting fixtures will produce a maximum initial luminance value of 0.6 horizontal and vertical foot-candles (as measured at 3 feet above grade) at the site boundary, and drop to 0.1 foot candles onto the abutting residential zoned property as measured within 15 feet from the residential zoned property line.

c. **Compliance** - Exterior lighting in the Rose Hill Business District must be brought into compliance with the requirements of KZC Section 115.85 in any of the following situations:

- 1) Replacement - The shielding requirements of KZC Section 115.85.2.b.1. shall be complied with when any nonconforming light fixture is replaced or moved.
- 2) Full Compliance - All other requirements of KZC Section 115.85.2 shall be complied with when there is an increase in gross floor area of more than 25 percent to any structure on the subject property.

Definitions from KZC Chapter 5:

Foot-candle - (fc): a unit of luminance amounting to one lumen per square foot.

Full Cut Off Type Fixture - A light fixture that by design of the housing, does not allow any light dispersion or direct glare to shine above a 90 degree, horizontal plane from the base of the fixture.

Light trespass - Unwanted light which, because of quantitative, directional or spectral attributes in a given contact, gives rise to annoyance, discomfort, distraction, or a reduction in the ability to see essential information.

Uniformity Ratio - Uniformity ratio describes the maximum level of illumination in relation to the lowest level of illumination for a given area. Example: uniformity ratio=4:1 for the given area, the lowest level of illumination (1) should be no less than 1/4 or "4 times less" than the maximum (4) level of illumination.