

## **Article XXII . HILLSIDE DEVELOPMENT REGULATIONS**

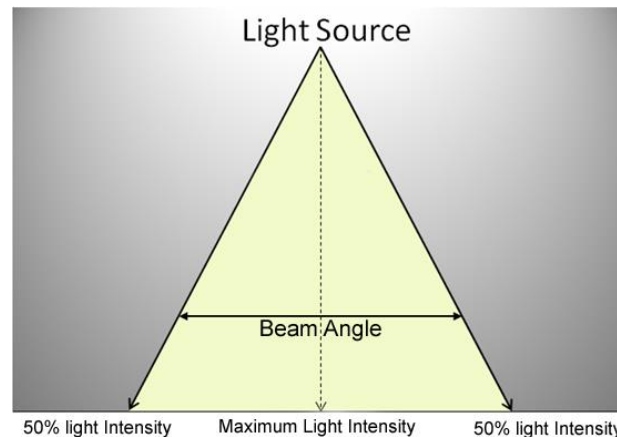
### **Section 2208      OUTDOOR LIGHTING**

A.                    Purpose: The intent of these lighting requirements is to preserve the low light level conditions that are inherently characteristic of the desert. The objective is to allow only the quantity and level of lighting necessary for safety, security and the enjoyment of outdoor living while protecting against direct glare and excessive lighting; protecting the ability to view the night sky; and preventing light trespass.

B.                    Definitions: For the purposes of this section, exterior lighting is defined and regulated by the following definitions and categories:

1.        **Beam Angle** – Beam angle is the angle of the cone of light where the intensity is 50% of the maximum intensity at center beam. (See Figure 9)

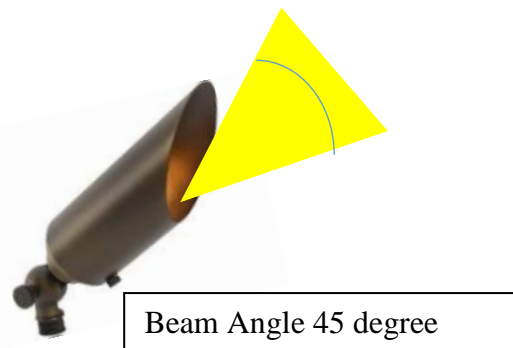
**FIGURE 9 – Light Source Beam Angle**



2.        **Foot Candle** - A unit of measure of the intensity of light falling on a surface equal to 1 lumen per square foot.
3.        **Lighting Types**
  - a) **Chandelier** - A branched, decorative lighting fixture that holds a number of bulbs and is suspended from a ceiling.

- b) Fully Shielded down light (Full Cut-Off) - A fixture shielded with an **Opaque** material so that light rays emitted by the fixture are projected only below a horizontal plane running through the lowest point on the fixture where light is emitted.
- c) Fully Shielded Up Light - A fixture shielded with an **Opaque** material. The maximum beam angle shall not exceed forty five (45) degrees. (See Figure 10)

**FIGURE 10**



- d) Fully Shielded (No Cut-Off) - A fixture that allows light rays to be emitted up and down and shielded with an **Opaque** material in such a manner to prevent the lamp source from being seen.
- e) Opaque fixture – Impervious to the passage of light.
- f) Recessed Can - A recessed light or downlight (also known as pot light) is a light fixture that is installed into a hollow opening in a ceiling
- g) Rope Light - a lighting fixture featuring small light bulbs linked together and encased in a PVC jacket to create a string of lights.
- h) Safety Lighting - Low-level lighting used to illuminate vehicular and pedestrian circulation
- i) Security Lighting - Lighting that is ~~f~~**Fully shielded** **Shielded** that is intended to provide bright illumination during emergency situations only. Lighting shall be on a motion sensor

- j) **String and Bulb lights** – a series of lights along a coated wire. Also known as Edison Lights, Cafe Lights, Patio Lights or Party Lights. Fairy Lights or Micro String Lights are tiny LED lights (about the size of a grain of rice) along a very thin bendable wire. Globe String Lights have larger bulbs in different shapes.
  - k) **Translucent fixture** - A material through which light can pass but the light source is obscured.
  - l) **Unshielded fixture** –a Luminaire with the light source clearly visible
4. **Lumens** – The Standard International (SI) unit of luminous flux.
  5. **Luminaire (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, position and protect the lamps, to connect the lamps to the power supply.
  6. **Lux - Unit of measurement of light level intensity. Equal to the light from one candle projected on a one meter surface at a distance of one meter from the candle (equal to one lumen per square meter). One foot-candle equals 10.8 Lux.**
  - ~~7. **Spill Light** - The amount of light that illuminates beyond the range or primary area that the fixture is intended to light.~~
  7. **Trespass Lighting** - Spill light that encroaches onto neighboring properties.
  8. **Visual Enjoyment Lighting** - Lighting intended to illuminate outdoor living areas. **Outdoor living areas include: a furnished patio, dining area, kitchen or cooking area, a fire pit or lounging area. Does not include active, outdoor recreation areas such as sport courts.**

C. **Design Standards:**

- ~~1. All building mounted light fixtures shall be fully shielded. Recessed lights in exterior soffits, eaves, or ceilings shall have a~~

~~45° cutoff. At the main entry of the primary structure, a maximum of two (2) translucent fixtures may be permitted as long as the total lumens, per fixture, do not exceed a maximum of 750 lumens. All other entrances, excluding garage doors, shall be limited to no more than one (1) fixture.~~

The maximum lighting intensity shall not exceed 0.25 **Footcandle** ~~footcandle~~ or **2.7 Lux** when measured at the property line **except for lighted entry markers described in two (2) below.**

All **Luminaires** ~~fixtures~~, unless otherwise allowed, shall be directed downward and properly aimed on the targeted areas to maximize their effectiveness and minimize the total number of lighting fixtures.

~~**Luminaires** Each lighting or illuminating device shall be set back from the nearest property line a minimum of ten (10) feet **except for entry marker lighting.** or a distance equal to or greater than the height of the device above natural or excavated grade, whichever is greater. As an exception a lighted entry marker may be placed on each side of the driveway entrance. The entry marker shall not be placed within the Town right of way or private road areas and the total height of the marker and light shall not exceed four (4) feet above finished grade adjacent to the driveway. The light source shall not exceed the equivalent projected brightness of 250 lumens.~~

D. **Lighting Functions**

1. **Building Mounted Luminaires**

**Following are the only building mounted luminaires permitted:**

**Main Entry Lighting -at the main entry of the primary structure a maximum of two (2) ~~Translucent~~ Luminaires may be permitted. These Luminaires are necessary for safety reasons including finding the door and seeing who is at the door.**

a) **Fully Shielded Luminaires**

**2700 Kelvins maximum**

**1100 Lumens maximum per fixture**

b) **Translucent Luminaires**

**2700 Kelvins maximum**

**800 Lumens maximum per fixture**

c) **Unshielded Luminaires (Coach/Carriage Lights)**

**2700 Kelvins maximum**

**550 Lumens maximum per fixture**

- d) **Recessed Can**  
**1100 Lumens maximum per fixture**  
**Beam Angle not greater than 90 degrees**
- e) **Chandelier**  
**2700 Kelvins maximum**  
**1100 Lumens maximum per fixture**  
**Fully shielded by architecture of the house**

**All other pedestrian entrances shall be limited to no more than one (1) Luminaire as listed above with the exception of garage doors. The first garage door may have two (2) luminaires and one (1) additional luminaire for each additional garage door per structure.**

Building mounted **Luminaires** lighting must be directed downward away from adjacent lots, streets, undisturbed areas, and open spaces, and may not be used to ~~light~~ **illuminate** walls or building elements for decorative purposes.

**Wall mounted entry Luminaires ~~not to exceed 8.5 feet above finished grade and~~ shall be shielded in such a manner as to avoid creating concentrated light (hot spots) on the structures to which they are mounted.**

2. **Walkway and Driveway Entry Marker Lighting**

**Lighted entry markers may be placed on each side of the driveway entrance and one side of an entry walkway with Hillside Committee approval (**Or should this have standards on the number of lights and distance between lights?**).**

**Repetitive rows of Luminaires along driveways or walkways accessing public streets are not allowed. Random placement of Luminaires along entry driveways and walkways may be allowed. Reflectors along driveways are preferred/encouraged instead of lighting. Driveway/walkway Luminaires must be located on the "downhill" side and aimed toward the "uphill" side, must be Fully Shielded and only light the driveway or walkway surface. Entry markers shall not be placed within the Town right-of-way or private road areas and the total height of the marker and Luminaire shall not exceed four (4) feet above finished grade adjacent to the driveway and walkway. The light source shall not exceed 300 Lumens.**

3. **Landscape Lighting**

- a) Groundmounted Luminaires - The number of fixtures is limited to one fixture per 1000 square feet of allowable disturbed area.

**The Light Source Beam Angle shall not exceed 45 degrees. The lamp must be recessed to provide a minimum 45° cut-off from the vertical plane. And shall not exceed 300 Lumens 150 lumens per fixture. These fixtures shall be Fully Shielded.**

- b) Post-mounted Luminaires - shall not exceed 36 inches above the ground (with the exception of driveway markers).
- c) Tree-Lighting – Exterior Luminaires affixed to trees shall be located above the lowest tree branch and deep into the tree canopy to limit light trespass outside the tree canopy. Luminaires shall not exceed 150 Lumens, shall be Fully Shielded down lights, and shall not exceed three (3) Luminaires per tree. Maximum height of Luminaire shall not exceed sixteen (16) feet.

4. **Security Lighting**

**Security Luminaire shall be on only when needed and shall be controlled by a timer that limits operation to 5 minutes per incident. The light source shall not exceed 1200 Lumens. Motion sensor/detector light fixtures are permitted for security lighting. Security lighting must be controlled separately from all other lighting. Security lights must be on timers that regulate their operation time to a maximum of 10 minutes and limited to lamps with a maximum of 750 lumens. The light source and reflecting device shall be Fully Shielded Down Light with an Opaque cover so that it is not visible from off the property. Fixtures shall be mounted no higher than twelve (12) feet above finished grade and shall be an integral part of and attached to the building.**

5. **Rope Lighting**

**Rope lighting shall not exceed 80 Lumens 3.6 watts per lineal foot for an incandescent rope light. and 36 inches from grade. Rope lighting must be shielded.**

6. **String and Bulb Luminaires**

**String and Bulb Luminaires are only permitted when associated with an outdoor living area adjacent to the main residence. Luminaires may only be strung overhead and cannot exceed sixteen feet in height and shall meet setbacks for the main house. String and Bulb Luminaires may not be used to wrap or outline architectural features or trees, nor may they be strung down or across walls. (Does this stay here or move to Prohibited Lighting section?)**

- E. Prohibitions In addition to the limitations noted above, the following **Luminaires** ~~lights or lighting effects~~ are strictly prohibited:
1. **Decorative colored** ~~Colored~~ lamps or bulbs (**with the exceptions of amber bulbs not to exceed 2700 kelvins and underwater Luminaires**) and string and unshielded rope lights; except ~~that~~ temporary holiday lighting ~~shall be permitted between October November 15<sup>th</sup> and January 15<sup>th</sup>.~~
  2. Tennis court and sport court lighting.
  3. ~~Any temporary~~ **Temporary** lighting that violates the provisions of this lighting section.
  4. Exterior **Luminaires** ~~lights~~, except **Security Lighting** ~~security lighting~~, that illuminate the adjoining mountainside such that the mountainside is visible from off the property **at any time between sunset and sunrise.**
    - i. There shall be no lighting permitted in areas identified as “undisturbed areas” of the property pursuant to the plans submitted under Section 2207 III.A.

Amendments:

Should the applicant desire to substitute outdoor light fixtures or lamps after a permit has been issued, the applicant must submit all changes to the Town Engineer for approval, with adequate information to assure compliance with this ordinance.

6. ~~A repetitive line up of lights along driveways or walkways accessing public streets shall not be allowed. Some random lighting of driveways or walkways accessing public streets may be allowed by the Hillside Building Committee. Driveway lights must be located on the "downhill" side and aimed toward the "uphill" side, must be fully shielded from below and only light the driveway surface. Driveway and walkway lights shall not exceed a maximum of 0.25fc at any point beyond 10 feet from the fixture.~~

7.

D. ~~Luminaire (Light Fixture)~~ All **Luminaires** luminaires shall be subject to the following limitations:

1. ~~Shall not exceed 1200 Lumens~~ 750 lumens when attached to a structure and confined to the immediate vicinity of a building entrance or outdoor living area of the residence.
2. ~~Shall not exceed 300 Lumens~~ 250 lumens for all other uses.
4.
- 5.

F. Mounting **Luminaires** Exterior fixtures shall be mounted:

1. ~~In the ground or on a post not to exceed 36 inches above the ground. When exterior fixtures are affixed to existing trees, the height of the fixture shall not exceed 8 feet above the finished grade.~~
2. ~~In or on a building wall not to exceed 8 feet above finished grade and shielded in such a manner as to avoid creating concentrated light (hot spots) on the structures to which they are mounted. Security lighting may be mounted on the structure to a height of not more than twelve (12) feet.~~