

# **TOWN OF PARADISE VALLEY**

**Lighting (Article 10, Section 1023 Outdoor Lighting and Illumination: Article 22, Section 2208 Outdoor Lighting; Article 25, Section 2506 Lighting; and Special Use Permit Guidelines, Section 2 Lighting)**

## **Text Amendment**

**Town Council**

**November 17, 2016**

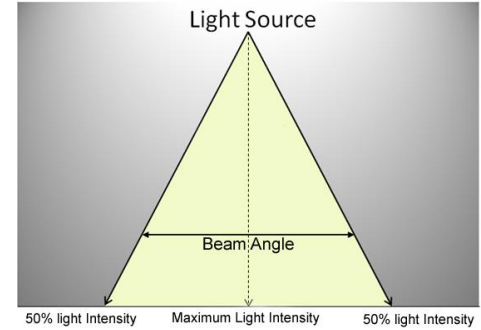


# DISCUSSION

- Major Revisions to Section 1023 (non-hillside lighting) include:
  - Addition of a Definition Section. Most of the definitions are not new, but were previously only in the Hillside Lighting Section. The definitions are now in both sections. The definitions of Lumens and Beam Angle are new and the definitions of Footcandle and Visual Enjoyment Lighting were revised.

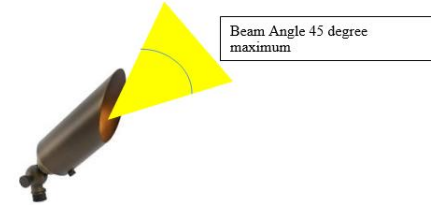


# Definitions



- Section 1023 Outdoor Lighting and Illumination. 65 repealed 201 374
- Definitions: For the purposes of this section, exterior lighting is defined and regulated by the following definitions and categories:
  - 
  - **1. Beam Angle – two times the vertical angle at which the intensity is 50% of the maximum.**
  - 
  - **2. Footcandle (fc) - A unit of illuminance equal to the light from one candle projected on a one foot square surface at a distance of one foot from the candle. One foot-candle equals one lumen.**
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  - **3. 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.**
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- **4. Fully Shielded Up Light - A fixture shielded with an Opaque material. The maximum beam angle shall not exceed forty five (45) degrees.**



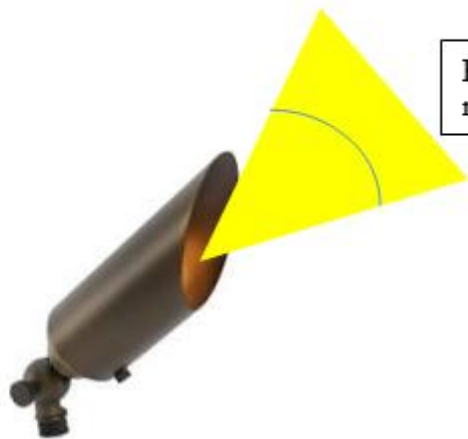
- 5. Fully Shielded (No Cut-Off) - A fixture that allows light rays to be emitted up and down and shielded with an Opaque material in such a manner to prevent the lamp source from being seen.



- Translucent – A material through which light can pass but the light source is obscured.
- 
- Trespass Lighting - Spill light that encroaches onto neighboring properties.
- 
- 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 outdoor, active recreation areas such as sport courts.
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4. **Fully Shielded Up Light** - A fixture shielded with an Opaque material. The maximum beam angle shall not exceed forty five (45) degrees.

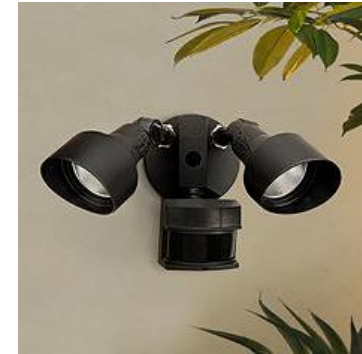
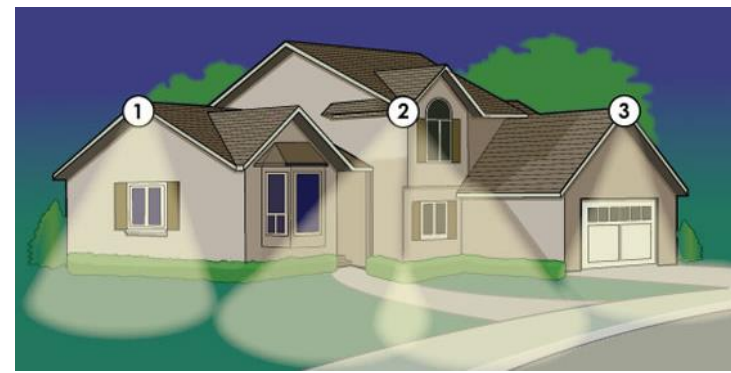


Beam Angle 45 degree  
maximum

# All references to wattage removed and replaced with Lumens were appropriate.

- The following light sources shall not exceed a height of thirty-six (36) inches above natural or excavated grade, whichever is lower, and shall not exceed **300 Lumens** ~~the equivalent~~ ~~projected brightness of a twenty-five (25) watt incandescent bulb:~~
  - 
  - a. All Lighting or illumination of landscape **with the exception of Fully Shielded Down Light Luminaires in trees);**
  - 
  - b. Accent or aesthetic lighting of buildings or structures;
  - 
  - c. Any **Fully Shielded Up Light** ~~illumination device~~ that **only** directs light above a horizontal plane.
  - 
  - **d. Rope lighting shall not exceed 80 Lumens per lineal foot and must be shielded so the individual Luminaires are not visible.**

- Lighting used for security and safety shall be an integral part of and attached to the building. The light source and reflecting device shall be shielded or hooded with an opaque cover so that it is not visible from off the property and shall not be higher than twenty (20) feet above natural or excavated grade, whichever is lower. ~~Each security/safety light is limited to the equivalent projected brightness of a seventy-five (75) watt incandescent bulb.~~ **The light source shall not exceed 1200 Lumens. The light source must be motion activated and on a timer not to exceed five (5) minutes per motion activation.** Limited use of security/safety lighting is encouraged to prevent excessive ambient light.







- **Required entry lighting at doors and garages shall be Fully Shielded (no cut off) Luminaires. However, this would not prohibit hanging chandelier type lights if they are shielded by the architecture of the building.**
- **Visual Enjoyment Lighting – Pole lights are only permitted when associated with an outdoor living area adjacent to the main residence. All Pole Lights shall be Full Shielded. Luminaire height cannot exceed 8.5 feet. All Pole Lights shall meet setbacks for the main house.**





- **Tree-Lighting – Exterior Luminaires affixed to trees shall not exceed 8.5 feet above the finished grade, shall not exceed 150 Lumens, shall be Fully Shielded down lights, and shall not exceed three (3) Luminaires per tree.**
- **Temporary holiday lighting shall be permitted between October 15<sup>th</sup> and January 15<sup>th</sup>. All other decorative colored Luminaires (with the exceptions of amber bulbs not to exceed 2700 kelvins and underwater Luminaires) or bulbs and string are prohibited.**



**11.** On Hillside lots there shall be no lighting permitted in the undisturbed areas of the property. Exterior lighting shall be kept to the minimum amount needed for the safe use of the property and all permitted lighting shall comply with all terms of this section.

**Additional regulations are listed in Article XXII Hillside Development Regulations, Section 2208 Outdoor Lighting.**

# ARTICLE 22 HILLSIDE DEVELOPMENT REGULATIONS

- **Beam Angle** – Beam angle is the angle of the cone of light where the intensity is 50% of the maximum intensity at center beam.
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- **Footcandle (fc)** - A unit of illuminance of equal to **the light from one candle project on a one foot square surface at a distance of one foot from the candle. One foot-candle equals one lumen** ~~1 lm/ft<sup>2</sup> (lumen / sq. ft.) or 10.76 lx (lux).~~
- 
- **Fully Shielded down light (Full Cut-Off)** - A fixture shielded with an **O**paque 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.
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- **Fully Shielded Up Light** - A fixture shielded with an **O**paque material. The maximum beam angle shall not exceed forty five (45) degrees.

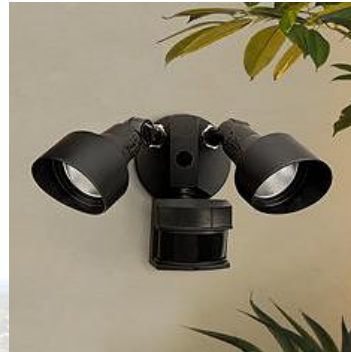
**All building mounted Luminaires shall be Fully Shielded. Following are the only building mounted luminaires permitted:**

- **Recessed lights in exterior soffits, eaves, or ceilings - shall have a Beam Angle not greater than 90 degrees. A hanging chandelier light may be permitted if it is fully shielded by the architecture of the building.**
- **Entry Lighting -at the main entry of the primary structure a maximum of two (2) Translucent Luminaires may be permitted as long as the total Lumens, per Luminaire, do not exceed a maximum of 1200 Lumens. All other entrances shall be limited to no more than one (1) Fully Shielded downlight Luminaire, with the exception of garage doors which may have additional Luminaires. Maximum illuminance per fixture is not to exceed 1200 Lumens.**
- **Security lighting – mounted no higher than twelve (12) feet above finished grade and on a motion sensor.**



- . Lighted entry markers may be placed on each side of the driveway entrance and one side of an entry walkway with Hillside Committee approval. 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. 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.**

- **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.**



# Mounting



- **Post-mounted Luminaires shall not exceed 36 inches above the ground (excepting driveway markers).**
- **Tree mounted Luminaires shall not exceed 8.5 feet above the finished grade, shall not exceed 150 Lumens, shall be Fully Shielded down lights, and shall not exceed three (3) lights per tree.**
- **Wall mounted entry Luminaires not to exceed 8.5 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 Luminaires shall not exceed 12 feet above finished grade and shall be an integral part of and attached to the building.**

Prohibitions In addition to the limitations noted above, the following

**Luminaires** ~~lights or lighting effects~~ are strictly prohibited:

- **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>.



- Tennis court and sport court lighting.

- ~~Any temporary~~ **Temporary** lighting that violates the provisions of this lighting section.

- 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~~.



# ARTICLE 25 SIGNS

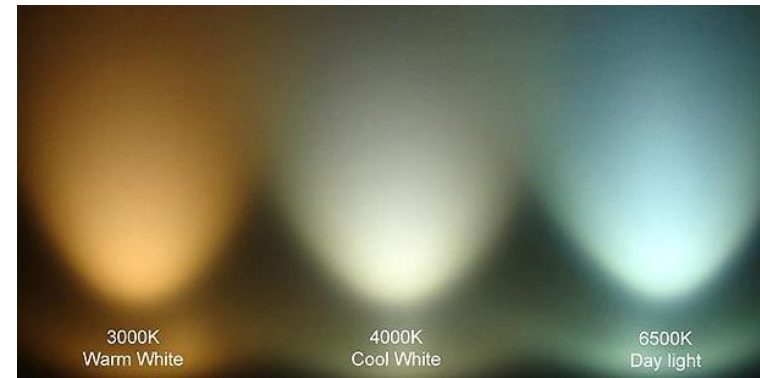


- A. **Signs may be illuminated with illumination confined to the area of the sign.** ~~Lighting shall not be flashing, intermittent or scintillating; shall not be moving, animated or create noise in any manner.~~
- B. **All light sources shall be Fully Shielded so they do not create a nuisance or hazard.**
- ~~B.~~ C. Back lighting of freestanding letters mounted on a wall shall be limited to 100 **Lumens** ~~lumens~~ per square foot of sign area and the letters shall be fabricated so that the **illumination source is not visible.** ~~light source cannot be seen from off the property.~~

**D. External sign lighting shall be shielded so that the illumination source is not visible from any adjacent street or property and does not shine beyond the sign area it is intended to illuminate.** ~~Indirect lighting of signs shall be limited to two (2) seventy-five (75) watt incandescent bulbs per sign. If the sign is double faced, the same type and amount of lighting may be used on each side. The seventy-five (75) watt incandescent bulbs shall be limited to seven hundred fifty (750) lumens per bulb, and shall be completely shielded from view at the nearest property line, and shall not exceed 0.75 foot candles of projected illumination measured at the nearest property line.~~

**E. Signs that are illuminated shall not exceed 0.75 foot candles of projected brightness measured at the nearest property line.**

**F. On externally lit signs, the color temperature of lighting shall be no more than 3000 Kelvins.**



**G. Lighting shall not be flashing, intermittent, or fluttering; shall not be moving, animated or create noise in any manner.**

**H. Signs may be illuminated only during the hours that the associated establishment is open for business.**

**I. Signs that are internally illuminated shall not exceed 0.75 foot candles of projected brightness measured at the nearest property line. **Backlit non-Opaque panels are not permitted.****



# SUP Guidelines

- i. uplighting shall be permitted so long as no **Luminaire** is greater than **300 Lumens** ~~25~~ ~~watts or emits more than 250 lumens.~~

# Alternate Lighting Regulations

## String and Bulb lights

String and Bulb lights - A series of small lights along a coated wire.

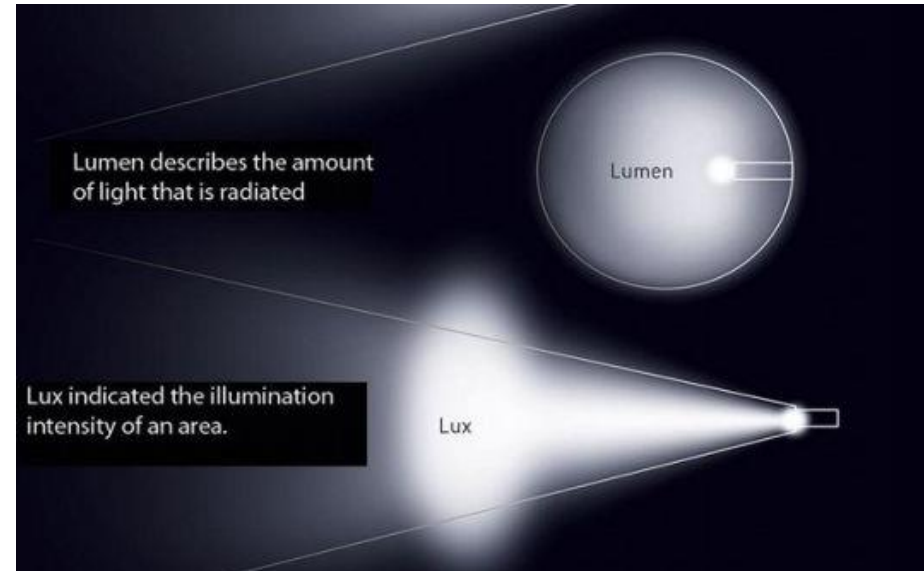
String and Bulb lights are only permitted when associated with an outdoor living area adjacent to the main residence. String and Bulb lights shall not exceed fifty (50) lumens per bulb and shall meet all setbacks for the main house. String and Bulb lights shall not be in plain view from any Rights of Way.



Lux- unit of illuminance, equal to one lumen per square meter.

The Lux measurement will also be added to the Code after all Footcandle measurements, for example:

The maximum lighting intensity shall not exceed 0.25 Footcandle **or 2.5 Lux** when measured at the property line.



# Height of Entry Lighting

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.



# Tree-Lighting



Exterior Luminaires affixed to trees shall not exceed 8.5 feet above the finished grade **be located two branches above the lowest 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.



# RECOMMENDATION

- It is recommended that the Town Council approve:
- Revisions to Article 10 Height and Area Regulations, Section 1023 Outdoor Lighting and Illumination: Article 22 Hillside Development Regulations, Section 2208 Outdoor Lighting; Article 25 Signs, Section 2506 Lighting; and Special Use Permit Guidelines, Section 2 Lighting as contained in Ordinance # 2016-04.
- **Or**
- Revisions to Article 10 Height and Area Regulations, Section 1023 Outdoor Lighting and Illumination: Article 22 Hillside Development Regulations, Section 2208 Outdoor Lighting; Article 25 Signs, Section 2506 Lighting; and Special Use Permit Guidelines, Section 2 Lighting as contained in Ordinance # 2016-04 **and with the additional staff recommendations contained in the Action Report.**

