



UDC Amendment Request Application for External Parties ***(neighborhoods, external agencies, stakeholders, etc.)***

Part 1. Applicant Information

Name: _____ Organization (if applicable): _____

Address: _____

Phone: _____ Email: _____

Signature: _____ Date: _____
(Include title if representing a governmental agency or public/private organization)

Part 2. Basis for Update (check only one)

- Clarification amendments to provide for ease of interpretation and understanding of the existing provisions of the UDC
(Note: Clarification amendments should not change or alter the intent or meaning of existing UDC provisions)
- Editing change that does not alter the impact of the provisions being addressed including changes such as spelling, grammar correction, formatting, text selection, or addition of text in compliance with existing ordinance, statutes or case law
- Completed Rule Interpretation Determination (*RID*)
- Requested by the Zoning Commission, Planning Commission, Board of Adjustment, HDRC, City Council or other appropriate city board or council (CCR, resolution or signature of the chairperson is required)

Part 3. Reason(s) for Update (check all that apply)

- Modify procedures and standards for workability and administrative efficiency
- Eliminate unnecessary development costs
- Update the procedures and standards to reflect changes in the law or the state of the art in land use planning and urban design
- See Part 4 (*if none of the provided choices in this section apply, please discuss the reasons for the proposed update in Part 4*)

Part 4. Summary of Proposed Update with Suggested Text (see application instructions)

UDC 2020 Proposed Amendment

Amendment 25-1**Applicant:** Hill Country Alliance – Dawn Davies**Amendment Title** – ‘Sec. 35-339.04 – Military Lightning Overlay Districts.’**Amendment Language:**

Sec. 35-339.04. - Military Lighting Overlay Districts.

STATEMENT OF PURPOSE

The purpose of this section is to establish regulations for outdoor lighting impacting military operations five (5) miles or less from the perimeter of Camp Bullis/Camp Stanley, Randolph Air Force Base, and Lackland Air Force Base.

Specific purposes of these lighting districts are as follows:

- *To reduce glare and potential distractions to night time training exercises occurring within this area.*
- *To balance the needs of the military, the City of San Antonio, and property owners regarding responsible development including outdoor lighting within this area.*
- *To permit the use of outdoor lighting that does not exceed the minimum level as guided by Illuminating Engineering Society (IES) recommended practices for night-time safety, utility, security, productivity, enjoyment, and commerce.*
- *Minimize adverse offsite impacts of lighting such as light trespass, and obtrusive light.*
- *To restore and preserve our heritage of a clear, dark night-sky.*

Designation Criteria. To be designated as a military lighting overlay district, an area must be five (5) miles or less from the perimeter of Camp Bullis/Camp Stanley, Randolph Air Force Base, or Lackland Air Force Base; provided, however, that if a Joint Land Use Study determines that lighting regulations are required in a smaller area than those required in a designated district, the City may initiate a rezoning to remove properties from a military lighting overlay district. If a Joint Land Use Study determines that different regulations are required or recommended, the City may modify the district regulations accordingly.

- (b) **Military Lighting Regions (MLRs) within Military Lighting Overlay Districts (MLODs).** Overall geographic areas shall be known as Military Lighting Regions within the Military Lighting Overlay District and shall be specified as described below.

- (3) This will ensure the following:

- A. Consistent color temperature of the lights.
- B. Color temperatures do not exceed 3000K ~~4100K~~ (~~white light or~~ warm light) depending on MLR.
- C. Fully shielded lights.
- D. No light emitted above ninety (90) degrees.
- E. Appropriate amount of light where needed.
- F. Glare restrictions are in place.

(f) **District Standards.**

- (1) As used in this article, the following terms shall be defined as follows:

BUG: A luminaire classification system that rates: backlight (B), uplight (U), and glare (G).

Business: A person, partnership, corporation, or organization engaged in commerce, manufacturing, or a service; profit and non-profit seeking enterprise or concern. The definition is intended to be broadly construed and shall include, but not be limited to, charitable organizations.

Candela: The unit of measure indicating the luminous intensity (candlepower) of a light source in a specific direction.

Color Rendering Index (CRI): A measure of the accuracy with which a light source of a particular CCT renders different colors in comparison to a reference light source with the same CCT. A high CRI provides better illumination with the same or lower lighting levels. It is important not to mix lamps with different CCTs and CRIs. Specify both the CCT and CRI when purchasing lamps.

Correlated Color Temperature (CCT): A measure in degrees Kelvin (°K) of light's warmth or coolness. Lamps with a CCT of less than 3,200°K are pinkish and considered warm. Lamps with a CCT greater than 4,000°K are bluish-white and considered cool.

Digital Sign: Catho-ray tube (CRT), flat panel liquid-crystal display (LCD), plasma, aerial imaging, projector or other electronic devices that are at the end-point of a digital signage system, presenting the content to include: Dynamic signs, electronic signs, digital media advertising, as well as signs within a Digital Signage Network, In-store TV Network, Captive Audience Network, Narrowcasting Network, Out-of-home Media Network, Digital Media Network, and Advertising Network.

Direct light: Light emitted directly from the lamp, off of the reflector diffuser, or through the refractor or diffuser lens of a luminaire.

Exempted nonconforming

luminaires: Any existing luminaires which were lawfully in place according to all applicable city ordinances at the time, but which do not now comply with all applicable regulations as of the effective date of district designation.

Flood lamp: means a specific form of lamp designed to direct its output in a specific direction (a beam) with a reflector formed from the glass envelope of the lamp itself, and with a diffusing glass envelope.

Foot-candle (fc): A unit of light measurement equal to one (1) lumen per square foot.

Full cutoff: Describes a luminaire light distribution where one hundred (100) candela per one thousand (1,000) lamp lumens (ten (10) percent) may emit at all vertical angles beginning at eighty (80) degrees up from nadir to less than ninety (90) degrees, and zero (0) candela per one thousand (1,000) lamp lumens (zero percent) is allowed at ninety (90) degrees (horizontal plane) and all angles above. This applies to all horizontal angles around the luminaire. A full cutoff luminaire is also fully shielded. (See Figure 1).

Fully shielded: A lighting fixture constructed in such a manner that all light emitted by the fixture, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the luminaire, is projected below the horizontal plane as determined by photometric test or certified by the manufacturer. A fully shielded fixture is not necessarily full cutoff.

Gasoline filling station: Shall have the definition as provided in Appendix A of the Unified Development Code.

Glare: A luminance produced by bright sources in the field-of-view superimposed on the image in the eye reducing contrast and hence visibility.

International Dark-Sky Association (IDA): A non-profit organization whose goals are to build awareness of the value of dark skies, and of the need for quality outdoor lighting.

"IESNA" (or "IES"): An acronym for the Illuminating Engineering Society of North America. The IESNA makes recommendations for outdoor lighting but does not set outdoor lighting community standards which are set through local regulations.

Illuminance: The quantity of light arriving at a surface measured in foot-candles.

Intermittent lighting: Luminaires that do not remain on for more than five (5) minutes.

Lumen: A unit of luminous flux. For purposes of this section, the lumen-output values shall be the initial lumen output ratings of a lamp. The lumen rating associated with a given lamp is generally indicated on its packaging or may be obtained from the manufacturer.

Luminaire: A complete lighting fixture consisting of a lamp or lamps together with the parts designed to distribute the light, to position and protect the lamps and to connect the lamps to the power supply.

Luminous flux: A quantitative expression of the brilliance of a source of visible light which is electromagnetic energy within the wavelength range of approximately three hundred ninety (390) nanometers (nm) to seven hundred seventy (770) nm. This quantity is measured in terms of the power emitted per unit solid angle from an isotropic radiator, a theoretical point source that radiates equally in all directions in three-dimensional space.

Mounting Height: The height of the photometric center of a luminaire above grade level.

Nadir: The direction pointing vertically down from the lowest light emitting part of the luminaire (see Figure 1 for an example).

Nit: A unit of illuminative brightness equal to one (1) candle per square meter, measured perpendicular to the rays of the source.

Outdoor lighting: Illumination of an outside area or object by any man-made device that is located outdoors and produces light.

Photometric Plan: A point-by-point plan illustrating the intensity and location of lighting on the property.

Sign, externally illuminated: A sign illuminated by light sources from the outside.

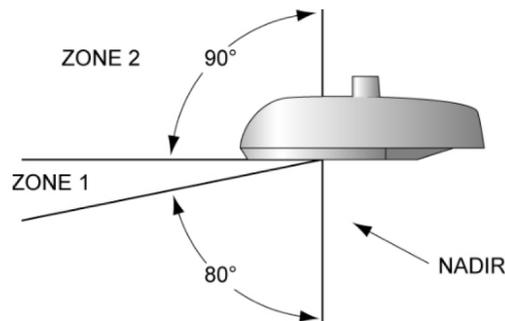
Spot lamp: A specific form of lamp designed to direct its output in a specific direction (a beam) with a reflector formed from the glass envelope of the lamp itself, and with a clear or nearly clear glass envelope. Spot lamps are those lamps so designated by the manufacturers.

Street lighting: Lighting provided for major, collector, and local roads where pedestrians and cyclists are generally present. The primary purpose of street lighting is to help the motorist identify obstacles, provide adequate visibility of pedestrians and cyclists, and assist in visual search tasks, both on and adjacent to the roadway.

Temporary outdoor lighting: Lighting allowed as specified in an approved temporary permit pursuant to the requirements of subsection 20.J below.

Trespass lighting: Light emitted by a luminaire that falls outside the boundaries of the property on which the luminaire is sited.

Figure 1



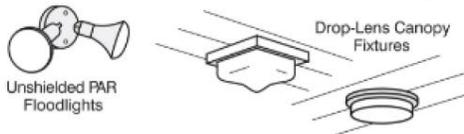
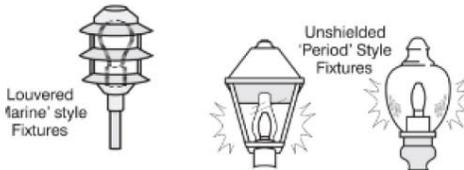
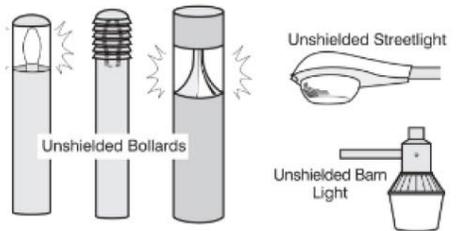
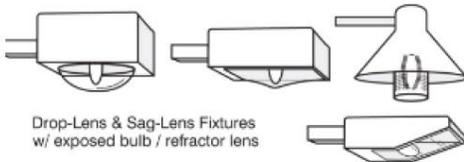
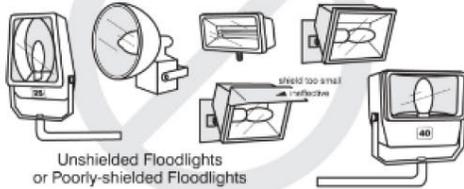
- (2) All public and private outdoor lighting installed after the effective date(s) of an MLOD district designation shall conform to the requirements established by this section.
- (3) Any luminaire in a new development that is aimed, directed, or focused so as to cause direct light from the luminaire to be directed toward an adjacent military base, camp or installation is prohibited. Such luminaire must be redirected or its light output controlled to eliminate such conditions.
- (4) For new development properties situated at or above one thousand two hundred (1,200) feet in elevation (above sea level), and which are situated within one (1) mile from the perimeter of the affected military installation, all lighting shall be fully screened from the affected military installation(s). Methods of screening can include, but are not limited to, fencing and landscaping.
- (5) Maximum CCT of ~~3000K~~ 2700K for all outdoor light sources within MLR1.
- (6) Maximum CCT of ~~4100K~~ 3000K for all outdoor light sources within MLR2.
- (7) **Residential Lighting.**
 - A. No trespass lighting within residential areas may exceed one and one-half (1½) foot-candles at the property line, with the exception of intermittent lighting which can be up to two (2) foot-candles.
 - B. All lighting within residential areas must comply with commercial lighting subsections (9)A—E below.
- (8) **Residential Lighting Exceptions.**

- A. Low Ambient Landscape lighting.
- (9) **Commercial Lighting.**
- A. All lighting fixtures installed on any commercial property and which include or exceed two (2) foot-candles shall be fitted to render them full cutoff (no light output emitted above ninety (90) degrees at any lateral angle around the fixture.) See "acceptable fixture" designation as shown in Figure 2. The manufacturer or firm handling the installation of outdoor lighting must provide documentation to prove full cutoff status of outdoor lighting to the planning and development services department during the plan review stage.

Figure 2 Acceptable vs. Unacceptable Fixture Examples

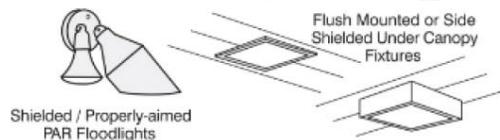
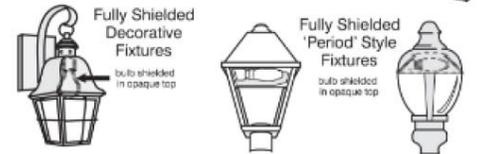
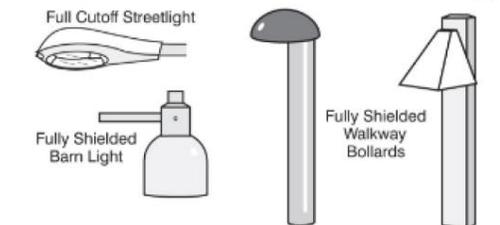
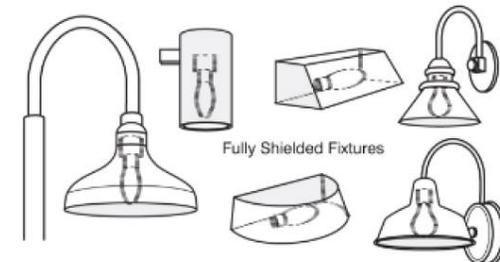
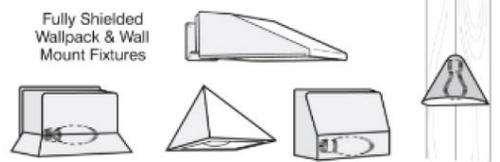
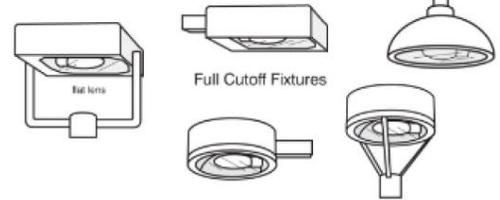
Unacceptable / Discouraged

Fixtures that produce glare and light trespass



Acceptable

Fixtures that shield the light source to minimize glare and light trespass and to facilitate better vision at night



Illustrations by Bob Crelin© 2005. Rendered for the Town of Southampton, NY. Used with permission.

- B. For lighting horizontal tasks such as roadways, sidewalks, entrances and parking areas, fixtures must meet "full cutoff" criteria (no light output emitted above ninety (90) degrees at any lateral angle around the fixture).
- C. Intermittent lighting must be of the "motion sensor" type that stays on for a period of time not to exceed five (5) minutes and has a sensitivity setting that allows the luminaire to be activated only when motion is detected on the site.
- D. All trespass lighting shall not exceed two and one-half (2½) foot-candles measured at the property line, except that residential trespass lighting is regulated in subsection f(7)A above.

- E. Floodlight fixtures must be aimed so as to prevent direct radiation of light into the open sky at any angle above the horizontal plane as shown in Figure 3 and verified using a tool such as shown in Exhibit 8.

Figure 3

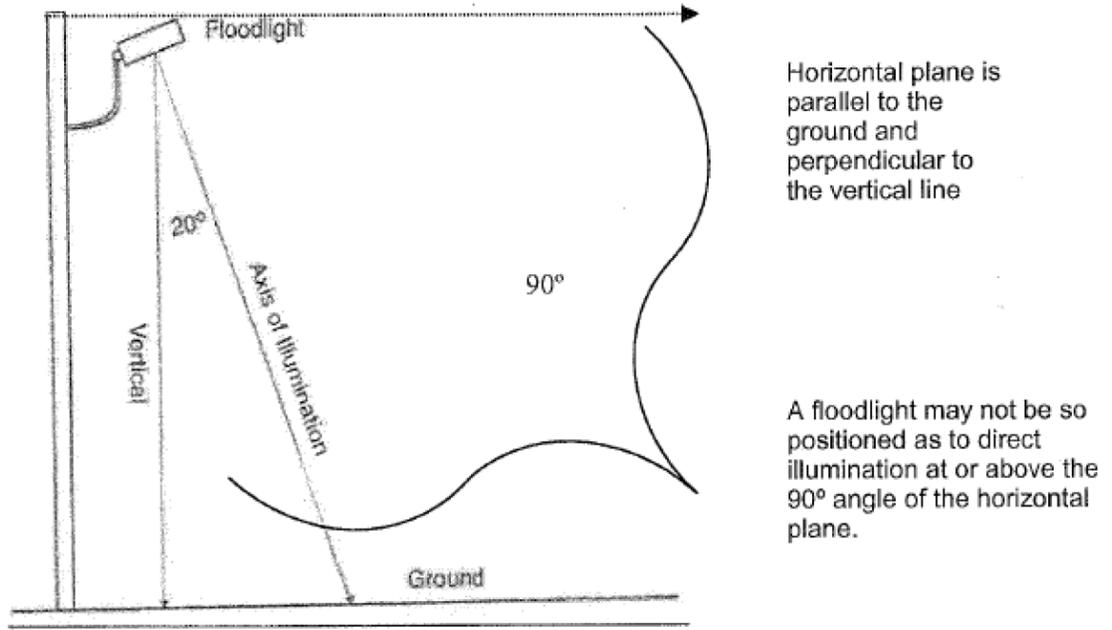


Figure 4

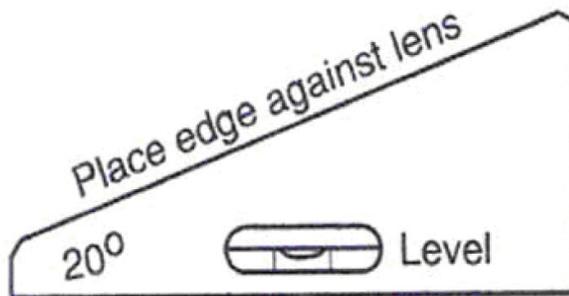


Figure 4: This is a tool for aiming lights such as the floodlight represented in Figure 3. This tool would verify the angle of 20° by placing the upper edge of the tool against the floodlight lens and adjusting the floodlight so that a level parallel to the bottom edge shows level.

- F. With the exception of lighting which is required for security and safety such as parking lot illumination, businesses must turn off outdoor lights emitting illumination levels exceeding two (2) foot-candles (fc) after 11:00 p.m. or one (1) hour after closing, the later of the two.
- G. Lighting installed to illuminate construction sites in order to secure or protect equipment at night shall meet the requirements of subsection f.(9)A. above.

(10) **Non-Residential.**

- A. Non-residential limits to off-site impacts are determined using Backlight, Uplight, and Glare (BUG) ratings.

(11) Gasoline Filling Stations.

- A. Outdoor sales and service station canopies must utilize canopy lights that are fully recessed into the canopy or are fully shielded by the canopy.
- B. The following average maintained illuminance levels for service stations must not be exceeded:

Service Station Component	Lighting Level
Approach	2.0 fc
Driveway	2.0 fc
Pump Island	10.0 fc
Building Facade	3.0 fc
Service Areas	3.0 fc
Landscape Highlights	2.0 fc

Note: fc = foot-candle

(12) Parking Lot and Parking Structure Lighting.

- A. Total pole and fixture height shall comply with section 35-392.b of this chapter.
- B. All lighting luminaires in surface parking lots and on the top decks of parking structures shall be fitted to render them full cutoff.
- C. Reflectivity. In order to allow for a variety of surface material options:
 - i. Surface parking lots shall be designed, coated or constructed so that illumination levels are no more than what is reflected from asphalt at an average of twenty (20) foot-candles.
 - ii. Top decks of parking structures shall be designed, coated or constructed so that illumination levels are no more than what is reflected from asphalt at an average of fifteen (15) foot-candles.
- D. One (1) hour after closing, businesses must reduce light output at least fifty (50) percent in surface parking lots and on top decks of parking structures; however, those luminaires turned off may be set to function utilizing a motion detector system or dimmer.

(13) Outdoor Sign Lighting.

- A. All signs, except conventional non-digital off-premise signs, located within three-quarters (¾) of a mile of a military installation with an associated MLOD designation shall be positioned in such a manner and contain "dark sky" approved shielding devices as to significantly reduce spillover light affecting the military installation and operations. In no instance shall signs be positioned facing parallel to the adjacent boundaries of the military installation.
 - B. On-premises signs may remain illuminated during regular business hours, but may not be illuminated later than one-half (½) hour after the business is no longer open to the public, nor prior to the daily opening of the business to the public.
 - C. On-premises signs utilizing neon tube lighting shall be exempt from the requirements of subsection B above.
 - D. Single-tenant on-premises signs shall be illuminated at a level no greater than seven (7) foot-candles measured at five (5) feet from the light source. Multi-tenant on-premises signs shall be illuminated at a level no greater than twelve (12) foot-candles measured at five (5) feet from the light sources.
 - E. Exterior means of illumination utilized for on-premises signs shall be positioned in a "top down" manner as depicted in Exhibit 7. Bottom-mounted fixtures shall not be used for on-premises signs.
 - F. Conventional non-digital off-premises signs shall employ an upward illumination system utilizing no more than three (3) luminaires to illuminate each sign message area (face). Each luminaire shall employ a refractor and hood that focuses the light on to the sign face and each luminaire may not exceed two hundred (200) watts.
 - G. All on-premises and off-premises digital signs shall be illuminated at a level no greater than 0.3 footcandles over ambient light levels for the location and time and shall employ light cutoff devices, such as louvers, to minimize light escaping above the horizontal plane. This subsection (13)G. is not exempt from the requirements of subsection (13)B. above.
 - H. Other than the requirements contained in subsection (d)(1) and subsection (13), the installation, operation, alteration, repair or improvement of an illumination device used for an off-premises sign are not subject to the other provisions of sections 35-339.04 or 35-498, but are subject to provisions of chapter 28 and chapter 35 as appropriate.
 - I. Nothing in this section shall be interpreted to authorize signs in areas of the city prohibiting signs.
- (14) **Externally Illuminated Sign Standards.**
- A. External illumination for signs shall conform to the following lamp source, shielding restrictions and lumen caps as shown in Exhibit 9.
 - B. Upward-directed sign lighting is prohibited.

**Table 339.04-5
Lamp Type and Shielding Standards**

	Lighting Zone	
	LZ-2	LZ-3
Color Rendition		
Initial output greater than or equal to 1800 lumens	F	F

Initial output below 1800 lumens	A(1)	A(1)
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Note: Lighting Zones (LZ) are defined in IDA model ordinance

Notes to Table 339.04-5.

A = all types of light fixtures are allowed except that any spot or floodlight shall be aimed not higher than twenty-five (25) degrees from the vertical line between the light fixture and the ground when light emitted from a light fixture is visible from any off-site residential property or public roadway.

F = only fully shielded light fixtures allowed.

1 = Flood or spot lamps shall be aimed no higher than twenty-five (25) degrees from the vertical line between the light fixture and the ground when the source is visible from any off-site residential property or public roadway.

(15) Street Lighting.

- A. This subsection regulates the illumination levels and CCT for the MLR's street lights that are installed on any street and must follow the American National Standard Practice for Roadway Lighting under the IESNA.
- B. Street light illumination must follow the guidelines in paragraph C, D, and E. of this subsection unless a licensed professional engineer, trained and experienced in the science of illumination engineering, deems other illumination levels based on IESNA standards more appropriate for existing conditions and staff concurs with this assessment.
- C. Street lights installed in residential areas on IESNA classified local roads shall have a max CCT of ~~3000K~~ 2700K. Street lights installed on IESNA classified collector and major roads shall have a max CCT of ~~4000K~~ 3000K.
- D. All standard streetlights must utilize full cutoff type luminaires that are installed level to the ground in two (2) intersecting perpendicular planes (see Figure 5), and should be horizontally level in all directions.

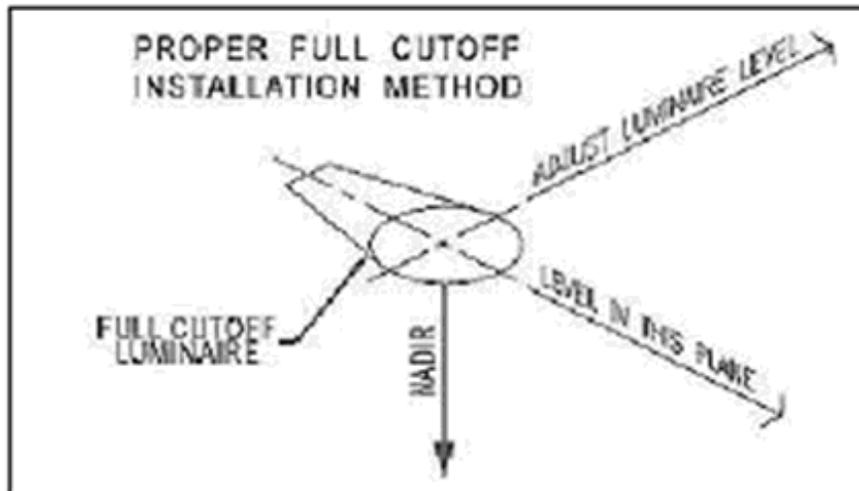


Figure 5

- E. New ornamental street lights must be classified as either IES "Full Cutoff" or IES "Cutoff" as determined by a valid photometric report. This report must be generated for the specified model by a qualified testing lab (testing to IES standards) and must include a full vertical evaluation through one hundred eighty (180) degrees, otherwise that fixture will be unacceptable.
