

Sec. 7-11-10. - Outdoor lighting standards.

(a) *Purpose.* The purpose of this section is to promote the public health, safety, security, and the nighttime use and enjoyment of property, including:

- To protect and improve safe travel for all modes of transportation;
- To reduce light pollution, light trespass, glare, and unnecessary high light levels and intensity;
- To promote energy efficient lighting practices and systems; and
- To maintain and improve nighttime aesthetics of Asheville, including preservation of the night sky.

This ordinance provides basic outdoor lighting requirements based on industry standards. Creative use of outdoor lighting to supplement building architecture, enhance outdoor enjoyment and other uses of lighting are encouraged within the framework of ordinance requirements.

(b) *Definitions.* For the purposes of this section, the following terms are defined.

Cutoff Classifications:

Full cutoff. A luminaire light distribution where zero candela intensity occurs at or above an angle of 90° above nadir. Additionally the candela per 1,000 lamp lumens does not numerically exceed 100 (ten percent) at or above a vertical angle of 80° above nadir. This applies to all lateral angles around the luminaire.



Cutoff. A luminaire light distribution where the candela per 1,000 lamp lumens does not exceed 25 (2.5 percent) at or above an angle of 90° above nadir, and 100 (ten percent) at or above a vertical angle 80° above nadir. This applies to all lateral angles around the luminaire.



Semicutoff. A luminaire light distribution where the candela per 1,000 lamp lumens does not exceed 50 (five percent) at or above an angle of 90° above nadir, and 200 (20 percent) at or above a vertical angle 80° above nadir. This applies to all lateral angles around the luminaire.



Noncutoff. A luminaire light distribution where there is no candela limitation in the zone above maximum candela.



Other Definitions:

Backlight, uplight, and glare (BUG) rating. A luminaire classification system that classifies backlight (B), uplight (U), and glare (G) ratings to evaluate luminaire optical performance related to light trespass, sky glow, and high angle brightness control.

Ballast. A device used with an electric-discharge lamp to obtain the necessary circuit conditions (voltage, current, and waveform) for starting and operating.

Candela. The metric unit luminous intensity (that is, power emitted by a light source in a particular direction, with wavelengths weighted by the luminosity function, a standardized model of the sensitivity of the human eye).

Direct glare. Glare resulting from high luminances or insufficiently shielded light sources in the field of view. It is usually associated with bright areas, such as luminaires, ceilings, and windows that are outside the visual task or region being viewed. A direct glare source can also affect performance by distracting attention.

Directional lighting. Lighting provided on the workplane or on an object. Light that is predominantly from a preferred direction.

Fixture. See luminaire.

Flood lamp. A form of lighting designed to direct its output in a specific direction with a reflector formed from the glass envelope of the lamp itself. Such lamps are so designated by the manufacturers and are typically used in residential outdoor area lighting.



Flood light. A form of lighting designed to direct its output in a diffuse, more or less specific direction, with reflecting or refracting elements located external to the lamp. These lights are prohibited in the City of Asheville.



Footcandle (FC). A quantitative unit measuring the amount of light (illumination) falling onto a given point. One footcandle equals one lumen per square foot.

Fully shielded. A light fixture constructed, installed and maintained in such a manner that all light emitted from the fixture, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the fixture, is projected below the horizontal plane through the fixtures lowest light emitting part.

Glare. The effect produced by a light source within the visual field that is sufficiently brighter than the level to which the eyes are adapted, to cause annoyance, discomfort, or loss of visual performance and ability.

Horizontal footcandles. A quantity of illumination (footcandle(s)) at a given point that is measured or calculated at a specified height in a plane parallel to the line of sight when looking at the brightest light source in the field of view.

IESNA. The Illuminating Engineering Society of North America, a non-profit professional organization of lighting specialists that has established recommended design standards for various lighting applications.

Illuminance. The amount of light (luminous flux incident) at a point on a surface (measured in lux or footcandles).

Internal refractive lens. A glass or plastic lens installed between the lamp and the sections of the outer fixture globe or enclosure. Refractive refers to the redirection (bending) of the light as it goes through the lens, softening and spreading the light being distributed from the light source thereby reducing direct glare.

Lamp. The device in a lighting fixture that provides illumination, typically a bulb, florescent tube, or light emitting diode (LED).

Light source. The element of a lighting fixture that is the point of origin of the lumens emitted by the fixture.

Light trespass. Unwanted light spilling onto an adjacent property and/or an excessive brightness (i. e. glare) is occurring in the normal field of vision.

Low luminosity lighting. Lighting fixtures whose lumen output does not exceed 1,000 lumens. See also Very low luminosity lighting.

Low level decorative lighting. Lighting fixtures whose lumen output does not exceed 60 lumens.

Low voltage lighting. Lighting equipment powered through a transformer such as a cable conductor that lowers the voltage supplied to the luminaires to 25v or less.

Lumen. A quantitative unit used to identify the amount of light emitted by a light source. A lamp is generally rated in lumens.

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, to position and protect the lamps, and to connect the lamps to the power supply.

Lux. A unit of illuminance. One lux equals one lumen per square meter. One footcandle equals 10.76 lux (often rounded to 10 lux for ease of use).

Maintained footcandles. Illuminance of lighting fixtures adjusted for a maintenance factor accounting for dirt build-up and lamp output depreciation. The maintenance factor used in the design process to account for this depreciation cannot be lower than 0.72 for high-pressure sodium and 0.64 for metal halide and mercury vapor.

Medium base. The size of lamp socket designed to accept a medium or Edison base lamp (typical size used in the home).

Nadir. The point directly below the luminaire.

Outdoor display area. Areas used to show products, merchandize, or other items for evaluation (i.e. cars, RVs, boats, etc.).

Outdoor performance area. An area permanently dedicated to the public presentation of music, dance, theater, media arts, storytelling, oratory, or other performing arts, whether publicly or privately owned, including but not limited to amphitheaters and similar open or semi-enclosed structures.

Post mounted decorative fixtures. Luminaires/fixtures that are mounted on a post (typically a 20-foot mounting height or less) and are decorative in style and appearance.

Right-of-way. An interest in land to the city which provides for the perpetual right and privilege of the city, its agents, franchise holders, successors, and assigns to construct, install, improve, reconstruct, remove, replace, inspect, repair, maintain, and use a public street, including related and customary uses of street rights-of-way such as sidewalks, bike paths, landscaping, mass transit facilities, traffic control, traffic control devices and signage, sanitary sewer, stormwater drainage, water supply, cable television, electric power, gas, and telephone transmission and related purposes in, upon, over, below, and across the rights-of-way.

Seasonal lighting. Holiday/temporary lighting displays to be utilized less than 30 days in any one year.

Shield. A device that is attached onto or inserted into a luminaire to alter the direction of light being emitted. A luminaire that has a shield attached or inserted is considered to be "shielded".

Street light. A luminaire that is used to light a street or roadway.

Top shield. A shield that is attached onto the top part of the luminaire or inserted into a luminaire to reduce/prevent uplight.

Uplight. The portion of luminous flux (light) from a luminaire emitted at angles above the horizontal.

Vehicular canopy. A roofed, open, drive-through structure designed to provide temporary shelter for vehicles and their occupants while making use of a business' services.

Vertical footcandles. A quantity of illumination (footcandle(s)) at a given point that is measured or calculated at a specified height in a plane perpendicular to the line of sight when looking at the brightest light source in the field of view.

Very low luminosity lighting. Temporary, seasonal, or permanent lighting fixtures whose luminosity does not exceed 15 lumens. See also low luminosity lighting.

Wall-mounted fixture. A luminaire/fixture that is typically mounted on or attached to a wall, column or building surface.

Wall pack. A type of light luminaire/fixture typically flush-mounted on a vertical wall surface.

Noncutoff Wallpack



Full Cutoff Wallpack



Wide-body refractive globe. A translucent lamp enclosure used with some outdoor fixtures to provide a decorative look (including but not limited to acorn- and carriage light-style fixtures). "Wide-body" refers to a wider than average size globe (greater than 15.75 inches in diameter). "Refractive" refers to the redirection (bending) of the light as it goes through the lens, rendering the light fixture more effective. Wide-body refractive globes are intended to soften and spread the light being distributed from the light source thereby reducing direct glare.

- (c) *Light measurement technique.* Light level measurements shall be made at the property line of the property upon which light to be measured is being generated. If measurement on private property is not possible or practical, light level measurements may be made at the boundary of the public street right-of-way that adjoins the property of the complainant or at any other location on the property of the complainant. Measurements shall be made at finished grade (ground level), with the light-registering portion of the meter held parallel to the ground pointing up. The meter shall have cosine and color correction and have an accuracy tolerance of no greater than plus or minus five percent. Measurements shall be taken with a light meter that has been calibrated within two years. Light levels are specified, calculated and measured in footcandles. All footcandle values below are maintained footcandles.



- (d) *Applicability.* This section shall apply to all outdoor lighting fixtures and land uses established after the

effective date of this ordinance [November 25, 2008] in all of the following conditions:

- (1) New development requiring Level I, II, or III site plan review pursuant to section 7-5-9 of this chapter;
 - (2) New one- and two-family dwelling units;
 - (3) All new street lighting for all private and publicly maintained streets within the City of Asheville and all streets that are subject to City of Asheville construction standards and subdivision review pursuant to section 7-5-8.
 - (4) New outdoor lighting systems as part of an existing commercial, industrial, or multi-family residential lighting installation even if the original lighting installation was purchased and/or installed before the effective date of this ordinance, unless part of an expansion not greater than ten percent of the original outdoor fixture count.
- (e) *Exemptions to outdoor lighting standards.* The following conditions are exempted from the standards set forth in this subsection, provided that they do not constitute a public safety concern or create a nuisance, and are maintained in a safe condition.
- (1) All lighting required by state and federal agencies.
 - (2) Seasonal lighting displays or very low luminosity lighting displays using multiple lamps.
 - (3) Temporary lighting for emergency, repair, construction, special events or similar activities.
 - (4) Ornamental gas lights that meet the definition of low level decorative lights.
 - (5) Historic landmark structures.
 - (6) Lighting fixtures located in a local Historic District when compliance with these standards conflicts with the district's guidelines.
 - (7) Low voltage landscape lighting, but such lighting should be shielded in such a way as to eliminate glare and light trespass.
- (f) *Lighting prohibitions.* The following types of outdoor lighting are specifically prohibited:
- (1) Lighting that could be confused for a traffic control device.
 - (2) Lighting that is oriented upward, except as otherwise provided for in this ordinance.
 - (3) Search lights, laser source lights, or any similar high intensity lights unless otherwise exempt.
 - (4) Blinking, flashing, moving, flickering, changing intensity, changing color lights not otherwise permitted in this ordinance.
 - (5) Any exposed lamp or bulb visible from the property boundary of the parcel on which the light is located.
 - (6) A suspended string of lights with individual lamps larger than 15 lumens.
 - (7) Any lighting fixture or device that is operated in such manner as to constitute a hazard or danger to persons, or to safe vehicular operation.
 - (8) Unshielded accent building mounted luminous tube (such as neon, LED, fluorescent or other similar technology).
 - (9) Flood lights.

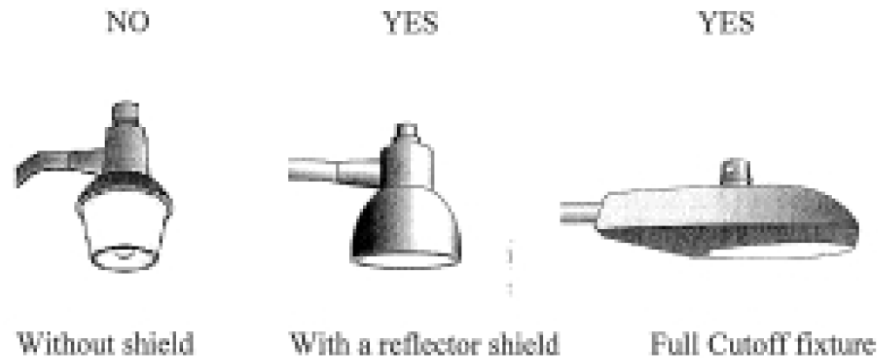
- (10) Internally illuminated wall panels.
- (11) Lighting of any angled building surface (i.e. roof pitch).
- (g) *General standards for new outdoor lighting.*
 - (1) All exterior light fixtures shall be classified as providing full cutoff light distribution unless otherwise allowed or exempted by this ordinance.
 - (2) The maximum light level at any property line shall be 0.5 footcandle maintained.

Exceptions:

- a. Unless otherwise allowed or exempted by this ordinance.
 - b. Where required by the NC Building Code as a component of the minimum requirements for a means of egress system.
- (3) Directional lighting allowed by the ordinance shall be directed downward unless otherwise allowed or exempted by this ordinance.
 - (4) All flood lamps shall not exceed 1,250 fixture lumens and must be shielded and aimed down 60 degrees from horizontal. Lamps shall be aimed such that the main beam from the light source is not visible from adjacent properties or the public street right-of-way.



- (5) All pole mounted lights shall not exceed 37-foot mounting height above grade.
- (6) All new dusk-to-dawn security lights shall be full cutoff fixtures with a maximum rating of not to exceed 9,500 fixture lumens (6,000 fixture lumens in residential zoning districts) or comply with subsection (n) (Non-conformities) with a mounting height not to exceed 25 feet.
 - a. All new dusk-to-dawn utility type fixtures must be equipped with a reflector shield that provides a full cutoff light distribution as defined in subsection (b) of this article. An approved alternative is to install a different type of fixture that has a full cutoff light distribution with a maximum rating of not to exceed 9,500 lumens.
 - b. All new LED dusk-to-dawn utility type fixtures shall comply with the LED standards listed in subsection (8) below.



- (7) Where land elevations to be lighted are higher or lower than a nearby street, residential dwelling or other type of facility and the lighting installation causes offensive light trespass and/or glare, the city planning director may require shields to be installed on the fixtures at the time of the installation or afterwards. If shields do not correct the problem sufficiently, the planning director may require that one or more of the following measures may be implemented in order to mitigate the conflict to the maximum extent possible:
- a. Change the aiming of offending fixtures,
 - b. Change the location and/or mounting height or the offending poles,
 - c. Change the light distribution pattern of the offending fixtures, or
 - d. Remove the offending poles and fixtures from the site.
- (8) All LED lighting shall meet the B-U-G ratings noted in the applicable subsections and comply with all other applicable requirements, and shall also meet the following standards:
- a. The LED correlated color temperature (CCT) shall not be higher than 4,300 K (Kelvin degrees).
 - b. The maximum number of fixture lumens shall not exceed 6,500 in residential districts and no more than 20,000 lumens in non-residential districts or for legal non-residential uses in residential districts, unless otherwise allowed or exempted.
- (9) Where these standards conflict with those required by the current editions of the NC Building Codes, the most restrictive standard shall apply. Where subsections of this ordinance are in conflict with each other, the most restrictive standard shall apply.
- (h) *Street lighting.*
- (1) The director of public works shall be responsible for executing the street lighting program and policies.
 - (2) The director of public works or his designee shall evaluate requests for additions, removals or other changes to street lighting and respond to the requestor within 30 days.
 - (3) These standards shall not apply to residential subdivisions lawfully established prior to the effective date of this ordinance (November 25, 2008) or extend to those properties acquired as part of such communities prior to November 25, 2008, provided it can be demonstrated that these properties were included in a documented community master plan.
- (3a) Existing non-LED street lights may be replaced with similar non-LED fixtures where warranted by

NCDOT and approved by the director of public works.

(4) General design standards.

- a. *Spacing.* Newly installed standard pole mounted street lights shall be placed at the following intervals as measured along the street centerline:
 - i. In residential areas street lights shall be placed at intervals of 125 feet to 150 feet. The public works director may approve wider spacing for low density residential subdivisions provided the overall density is less than two units per acre and both the streets and light fixtures are privately maintained.
 - ii. On major arterial roadways, street lights shall be placed at intervals of 75 feet to 100 feet.
 - iii. In business districts, street lights shall be placed at intervals of 55 feet to 80 feet.
 - iv. Preference in placement shall be given to street intersections and street curves.
 - v. Alleys are excluded from the spacing and placing requirements of this policy but are encouraged to be illuminated using private security lights, wall packs, or other fixture utilizing a full-cutoff design.
 - vi. In areas where post-mounted fixtures (18-foot mounting height or less) are installed, the spacing of posts should be adjusted to the particular fixtures used and as approved by the director of public works or his/her designee. IESNA Recommended Practice 8 (Roadway Lighting) should be used as a guide for street lighting design.
- b. *Alignment.* Street lighting on newly constructed streets shall be alternately staggered on each side of the street wherever possible.
- c. *Luminance.* Newly installed street lighting fixtures shall utilize the city's standard and meet the following lumen ratings:
 - i. In residential districts — no greater than 6,500 fixture lumens, with exceptions noted in subsection (5) below.
 - ii. In commercial districts — no greater than 20,000 fixture lumens, with exceptions noted in subsection (5) below.
- d. *Mounting support.* It is preferred that existing poles and associated mounting hardware be used to mount street lights. However, decorative poles and associated mounting hardware may be used upon agreement between the requestor, Progress Energy and the City of Asheville.
- e. *Historic district.* Full cut-off fixtures are required, however, semi-cutoff and cutoff decorative post-mounted fixtures (18-foot mounting height or less) may be used in historic districts when compliance with the district's design guidelines require it. All fixtures should limit glare, light trespass and light pollution.
- f. *Interstate highway lighting.* The installation of lighting on existing or future interstate highways within the City of Asheville shall require a municipal agreement between the city and the NC Department of Transportation.
- g. *Assumption of private street lighting.* The City of Asheville may also, upon approval of the

governing body, assume responsibility for streetlights that at the time of construction of private roadways, providing the following conditions are met:

- The street lights are installed in accordance with this policy.
- The private roadway(s) served by the streetlights are accepted into the City of Asheville or NCDOT road system.

h. *Variations in land elevations.* Where land elevations vary and cause the street lighting poles to be installed higher or lower than adjacent roads or property, thus causing offensive light trespass and/or glare, the standards set forth in subsection (g)(7) may also be applied to street lighting.

(5) All LED street lighting shall comply with the standards in subsection (g)(8) and shall have a maximum BUG rating of B3, U3, G3 on commercial streets and major arterial DOT and City of Asheville roads, and a maximum of B2, U1, G2 on residential streets.

Exceptions:

- a. Use of LED street lights in residential areas over 6,500 and up to 8,200 fixture lumens are allowed at intersections and safety sensitive locations, as deemed necessary by the director of public works.
 - b. Use of LED street lights on commercial and major arterial roads over 20,000 fixture lumens are allowed to ensure public safety as deemed necessary by NCDOT and by the director of public works.
- (6) The director of public works may grant exceptions to these standards when, based on the director's determination, conditions (including but not limited to topography, road geometry, heavy foliage, and criminal activity, etc.) are adversely impacting public safety and welfare.
- (i) *Site lighting.* All ground mounted light fixtures shall comply with the general standards listed in subsection (g) above as well as the standards listed here.
- (1) Pedestrian lighting on posts with a mounting height of 18 feet or less shall be directed to paths and sidewalks. Lighting should be placed to provide good uniformity, to limit glare, light trespass, light pollution and the casting of shadows on sidewalks. All pedestrian lighting fixtures shall comply with the other sections of this ordinance.
 - (2) Outdoor display areas, as defined in article 2 of this chapter, shall have a maximum average of illuminance of 20 maintained footcandles.
 - (3) The mounting height of all outdoor lighting, except outdoor sports field lighting and outdoor performance area lighting, shall not exceed 37 feet above finished grade.
 - (4) Illumination of all open or surface parking and outdoor commercial areas shall comply with the following light levels limits, uniformity ratios and other criteria listed below:
 - a. Open parking facilities - For lighted parking lots the recommended minimum light level shall be no less than 0.2 footcandles. All light levels are measured at ground level. The minimum light level requirements vary depending on the activity classification. The specified minimum FC value

above 0.2 FC as outlined in the following table means that the lowest light level point or location in the parking lot must not exceed the minimum stated FC value in the table (i.e. 0.9 FC for large shopping centers). An average to minimum uniformity ratio of 4:1 means that the average FC to minimum FC ratio cannot be worse (higher) than 4:1. See the following table:

Light Levels for Open Outdoor Parking Facilities*		
Use/Task	Maintained Footcandles	Uniformity Avg./Min.
(a) Parking, residential, multi-family		
• Low to medium vehicular/pedestrian activity	Range from 0.2 Min. to 0.7 Min.	4:1
(b) Parking, industrial/commercial/Institutional/municipal		
• High activity, i.e. large shopping centers/fast food facilities, major athletic/civic cultural events	0.9 Min.	4:1
• Medium/low activity, i.e. community shopping, office parks, hospitals, commuter lots, cultural/civic/recreational events, residential neighborhood shopping, industrial employee parking, schools, church parking	Range from 0.2 Min. to 0.7	4:1

* Source: IESNA 8th Edition Lighting Handbook; Modifications: Medium and Low Activity Level recommendations have been combined and modified.

Notes:

1. Illumination levels are horizontal on the task, e.g. pavement or area surface.
2. Uniformity ratios dictate that average illuminance values shall not exceed minimum values by more than the product of the minimum value and the specified ratio. For example, for commercial parking medium/low activity, the average footcandles shall not be in excess of 2.8

(0.7 × 4).

3. The planning director or his/her designee shall be responsible for determining the activity level for a development. Any project that requests a light level that exceeds the footcandle values outlined above must demonstrate a need for a higher light level to the City of Asheville planning director or his/her designee.
- (5) All LED site lighting shall comply with the standards in subsection (g)(8) and comply with the following.
 - a. Post-mounted decorative fixtures shall have a maximum BUG rating of B3, U1, G1 when 9,500 fixture lumens or less and not taller than 18-feet, unless otherwise exempted.
 - b. LED site lighting greater than 9,500 fixture lumens or taller than 18 feet shall have a maximum BUG rating of B3-U0-G3, unless otherwise excepted.
 - (6) Historic districts require the use of full cut-off fixtures; however, semi-cutoff and cutoff decorative post-mounted fixtures (18-foot mounting height or less) may be used in historic districts when compliance with the district's design guidelines requires it. All fixtures should limit glare, light trespass and light pollution.
 - (7) Post mounted lawn luminaires may be installed in residential applications provided the fixture delivers a maximum of 1,000 lumens output (equivalent to a 60 watt incandescent bulb) and utilizes a translucent lens covering the light source. The height of the post shall not exceed eight feet above the finished grade.
 - (8) All ornamental or aesthetic lighting of buildings and landscaping lighting not attached to a building shall be located, aimed, and shielded so that direct illumination is focused exclusively on the building façade, plantings, and other intended site feature and away from adjoining properties, the night sky, and the public street right-of-way. Additionally, these fixtures shall also meet the following standards:
 - a. Illumination on any vertical surface shall not exceed .5 FC average maintained and shall not spill over roof lines or building edges. Reflected glare bouncing off windows or other glazing that is visible from adjacent property is prohibited.
 - b. All ground mounted landscape and residential façade lighting systems not aimed downward shall utilize low level decorative lighting fixtures and shall be aimed no greater than 60 degrees from the horizontal ground level. The luminaires shall be shielded and aimed such that the light source cannot be seen from adjacent property or public areas or rights-of-way.
- (j) *Lighting attached to structures or buildings.* All light fixtures attached or mounted against a building or structure shall comply with the general standards listed in subsection (g) above as well as the standards listed here.
- (1) *Covered parking facilities.* Top levels of garages open to the sky shall comply with the requirements outlined in subsection (i)(4) for open parking facilities. The mounting height on the top level of a garage shall not be greater than 22 feet above the parking deck top floor including raised foundations and the light fixture classification shall be full cutoff.

Additionally, all lighting within open parking garages shall be fully shielded so as not to create glare off-site.

- (2) *Lighting for vehicular canopies.* Areas under a vehicular canopy shall have an average maximum horizontal illuminance of 20 maintained footcandles (FC). Areas outside the vehicular canopy shall be regulated by the standards of subsection (i) above. Lighting under vehicular canopies shall be designed so as not to create glare off-site. Acceptable methods include one or more of the following:
- a. Recessed fixture incorporating a lens cover that is either recessed or flush with the bottom surface (ceiling) of the vehicular canopy that provides a full cutoff or fully shielded light distribution.
 - b. Surface mounted fixture incorporating a flat glass that provides a full cutoff light distribution.
- (3) *Skylights.* Buildings equipped with skylights or other horizontal daylighting openings must control the light trespass and light pollution that is projected upward from the interior lighting system through the daylight glazing into the outdoor night environment and shall also meet the following standards:
- a. Skylight glazing shall specify a maximum light transmission of 20 percent.
 - b. Businesses operating on a 24-hour basis shall employ the use of shielding, louvers or other approved control devices installed to restrict light trespass, light pollution and glare.
 - c. Light fixtures shall not be located in or directly below light wells that are not utilizing shielding or louvers.

Exception: This subsection does not apply to one- and two-family dwelling units.

- (4) *Ornamental and general use lighting.* All ornamental and general use fixtures attached to buildings or structures shall be located, aimed, and shielded so that direct illumination is focused exclusively on the building façade or the ground immediately below the fixture. Additionally, these fixtures shall also meet the following standards:
- a. All wall-mounted fixtures, wall packs, porch lights, ceiling mounted and pendant style fixtures shall be full cutoff fixtures.

Exception: The fixture delivers a maximum of 1,000 lumens output (equivalent to a 60 watt incandescent bulb) and utilizes a translucent lens covering the light source.
 - b. All recessed ceiling fixtures incorporating a lens cover shall be restricted to lenses that are either recessed or flush with the ceiling.
 - c. Lamps providing minimum exit discharge lighting as required by the NC Building Codes shall be shielded unless otherwise exempt.
 - d. Dual purpose fixtures (general use and exit discharge) fitted with battery back-up for emergency use shall be full cut-off. Those fixtures that come on only during an emergency or power outage are exempt.

Comparison of efficacy by power
(120 Volt incandescent lamps)

Output (Lumens)	Power (Watt)		
	Incan	CFL	LED
500	40	8—10	9
850	60	13—18	12—15
1,200	75	18—22	15
1,700	100	23—28	18

(5) All LED lighting attached to buildings or structures shall comply with the standards in subsection (g)(8) and shall have a maximum BUG rating of B2, U0, G2, unless otherwise exempted or excepted.

(k) Outdoor sports field/outdoor performance area lighting.

- (1) The mounting height of outdoor sports field and outdoor performance area lighting fixtures shall not exceed 80 feet from finished grade.
- (2) All outdoor sports field and outdoor performance area lighting fixtures shall be equipped with a glare control package (louvers, shields, or similar devices). The fixtures must be aimed so that their beams are directed and fall within the primary playing or performance area.
- (3) The hours of operation for the lighting system for any game or event shall not exceed one hour after the end of the event.
- (4) All outdoor sports field and outdoor performance area lighting shall also meet the general standards set forth in subsection (g).

(l) *Signs.*

- (1) Lighting fixtures illuminating signs shall be carefully located, aimed, and shielded so that light is directed only onto the sign façade and glare is significantly reduced. Lighting fixtures shall not be aimed toward adjacent streets, roads, or properties.
- (2) Internally illuminated signs are permitted so long as the sign is not too bright from the surroundings and does not create a nuisance or hazard to motorists.
- (3) Lighting fixtures shall be directed downward rather than upward.
- (4) This ordinance does not regulate signs. See the City of Asheville sign ordinance for this information.

(m) *Permits.* The applicant for any permit required for work involving outdoor lighting shall submit documentation at time of site plan or plot plan approval that the proposed lighting plan complies with the

provisions of this Code. The submission shall contain, but not be limited to the following, all or part of which may be part of or in addition to the information required elsewhere in this Code:

- (1) For all Level III projects, a point-by-point footcandle array in a printout format indicating the location and aiming of illuminating devices must be furnished. For lower level projects, a point by point array must be furnished upon request. The printout shall indicate compliance with the maintained footcandle limit required by the appropriate section of this Code.
- (2) For all Level III projects, a description of the illuminating devices, fixtures, lamps, supports, reflectors, poles, raised foundations and other devices including but not limited to manufacturers or electric utility catalog specification sheets and/or drawings, and photometric report indication fixture classification (cutoff fixture, wallpack, flood light, etc) must be furnished. For lower level projects, this same information will be required upon request.
- (3) All Level III projects, conditional use permit projects and conditional zoning projects will be evaluated on a case specific basis and may be held to a standard that exceeds those minimum standards set forth in this ordinance. Council may modify these standards per subsection 7-9-9(c)3.
- (4) Inspection or plan review personnel may waive any or all of the above permit requirements, provided the applicant can otherwise demonstrate compliance with this Code.

(n) *Non-conformities.*

- (1) Any lighting fixture lawfully in place or approved by the city prior to the adoption of this ordinance shall be exempt from these requirements. Routine maintenance, including changing the lamp, starter, photo control, lens, and other required components is permitted for all existing fixtures.
- (2) All dusk to dawn utility type lights installed prior to November 25, 2008, will be exempted from full cutoff requirements for five years from this date. After five years, all such lights shall be discontinued, removed or made to conform to the provisions of this ordinance.
- (3) All utility owned flood lights installed prior to [insert effective date here] will be exempted from the prohibition on flood lights for five years from this adoption date. After five years, all such lights shall be discontinued, removed or replaced with conforming fixtures. Existing floodlights that are privately owned may continue to be used provided the light fixture is angled down and/or shielded so that it produces a full cutoff distribution.
- (4) Should the property owner fail to bring the lighting system into compliance, the owner shall be subject to the civil penalties set forth in subsection 7-18-2(b).

(o) *Appeals.* Appeals regarding the interpretation or application of this ordinance may be taken to the board of adjustment in the manner provided in article VI.

(Ord. No. 3676, § 1, 11-25-08; Ord. No. 4148, § 1, 12-11-12; Ord. No. 4275, § 1, 1-28-14)