

**§ 220-36.2. Lighting.** [Added 10-6-2008 STM by Art. 12]

- A. Objective. The regulation of outdoor lighting is intended to enhance public safety and welfare by providing for adequate and appropriate outdoor lighting, provide for lighting that will complement the character of the Town, reduce glare, minimize light trespass, and reduce the cost and waste of unnecessary energy consumption.
- B. Applicability.
- (1) The requirements of this section shall apply to outdoor lighting on lots and parcels in all districts, but shall not apply to one- and two-family dwellings on lots on which they are the principal use, streetlighting, lights that control traffic, or other lighting for public safety on streets and ways.
  - (2) When an existing outdoor lighting installation is being modified, extended, expanded or added to, the entire outdoor lighting installation on the lot shall be subject to the requirements of this section if 20% or more of the fixtures will be new or altered.
  - (3) Nonconforming temporary outdoor lighting necessitated by construction, special nonrecurrent events, or emergency contingencies may be used upon issuance of a temporary lighting permit by the Building Inspector.
  - (4) The following light sources are prohibited:
    - (a) Neon signs;
    - (b) Mercury vapor and quartz lamps; and
    - (c) Searchlights.
- C. Definitions. For the purpose of this section, the following words and phrases shall have the following meanings:

**COLOR RENDERING INDEX (CRI)** — A measurement of the amount of color shift that objects undergo when lighted by a light source as compared with the color of those same objects when seen under a reference light source of comparable color temperature. CRI values generally range from zero to 100, where 100 represents incandescent light.

**CUTOFF ANGLE** — The angle formed by a line drawn from the direction of the direct light rays at the light source with respect to the vertical, beyond which no direct light is emitted.

**DIRECT LIGHT** — Light emitted from the lamp, off the reflector or reflector diffuser, or through the refractor or diffuser lens, of a luminaire.

**FIXTURE** — The assembly that houses a lamp or lamps, and which may include a housing, a mounting bracket or pole socket, a lamp holder, a ballast, a reflector or mirror, and/or a refractor, lens or diffuser lens.

**FOOTCANDLE** — A unit of illumination. One footcandle is equal to one lumen per square foot.

**FULLY SHIELDED LUMINAIRE** — A lamp and fixture assembly designed with a cutoff angle of 90°, so that no direct light is emitted above a horizontal plane.

**GLARE** — Light emitted from a luminaire with an intensity great enough to produce annoyance, discomfort, or a reduction in a viewer's ability to see.

**HEIGHT OF LUMINAIRE** — The vertical distance from the finished grade of the ground directly below to the lowest direct light-emitting part of the luminaire.

**INDIRECT LIGHT** — Direct light that has been reflected off other surfaces not part of the luminaire.

**LAMP** — The component of a luminaire that produces the actual light.

**LIGHT TRESPASS** — The shining of direct light produced by a luminaire beyond the boundaries of the lot or parcel on which it is located, or on-site lighting producing more than 0.3 footcandles horizontal brightness at ground level at any point off premises, except within a street.

**LUMEN** — A measure of light energy generated by a light source. One footcandle is one lumen per square foot. For purposes of this bylaw, the lumen output shall be the initial lumen output of a lamp, as rated by the manufacturer.

**LUMINAIRE** — A complete lighting system, including a lamp or lamps and a fixture.

D. Plan contents. Wherever outside lighting is proposed, every application for a building permit, electrical permit, special permit, variance, or site plan shall be accompanied by a lighting plan which shall show:

- (1) The location and type of any outdoor luminaires, including the height of the luminaire;
- (2) The luminaire manufacturer's specification data, including lumen output and photometric data showing cutoff angles;
- (3) The type of lamp, such as LED, metal halide, compact fluorescent or high-pressure sodium;
- (4) That light trespass onto any street or abutting lot will not occur. This may be demonstrated by manufacturer's data, cross-section drawings, or other means.

E. Control of glare and light trespass:

- (1) Any luminaire with a lamp or lamps rated at a total of more than 2,000 lumens shall be of fully shielded design.
- (2) All luminaires, regardless of lumen rating, shall be equipped with whatever additional shielding, lenses, or cutoff devices are required to eliminate light trespass onto any street or abutting lot or parcel and to eliminate glare perceptible to persons on any street or abutting lot or parcel.
- (3) Subsection E(1) above shall not apply to any luminaire intended solely to illuminate any freestanding sign or the walls of a building, but such luminaire shall be shielded so that its direct light is confined to the surface of such sign or building.
- (4) All lamps subject to this bylaw shall have a minimum color temperature of 2,000K. and a maximum color temperature of 4,500K.

- (5) Control of illumination levels. All parking areas and pedestrian facilities serving nonresidential uses and open to the general public shall be provided with illumination during all hours from dusk to dawn while those facilities are open to the general public. Such illumination shall provide not less than 0.2 average maintained horizontal footcandles. However, in performing site plan review under § 220-34, the Planning Board may approve alternative arrangements if it determines that, because of special circumstances or alternative provisions, the specified illumination is not necessary or appropriate for the protection of the public safety.

F. Lamp types:

- (1) Lamp types shall be selected for optimum color rendering as measured by their color rendering index (CRI), as listed by the lamp manufacturer. Lamps with a color rendering index lower than 50 are not permitted. This subsection shall not apply to temporary decorative lighting which may include colored lamps, such as holiday lighting.
- (2) No flickering or flashing lights shall be permitted. Processes, such as arc welding, which create light flashes shall be confined within buildings or shielded to prevent either direct glare or flashing.
- (3) A luminaire attached to the exterior of a building or structure for area lighting shall be mounted no higher than 20 feet above grade and shall be shielded to control glare.
- (4) A luminaire attached to a pole shall be mounted no higher than 20 feet above grade and shall be shielded to control glare.

G. Hours of operations. Outdoor lighting shall not be illuminated between 11:00 p.m. and 6:00 a.m., with the following exceptions:

- (1) If the use is being operated, such as a business open to customers, or where employees are working, or where an institution or place of public assembly is conducting an activity, normal illumination shall be allowed during the activity and for not more than 1/2 hour after activity ceases;
- (2) Low-level lighting sufficient for the security of persons or property on the lot may be in operation between 11:00 p.m. and 6:00 a.m., provided the average illumination on the ground or on any vertical surface is not greater than 0.5 footcandles.

H. Special permits. In accordance with § 220-35, Subsection C, the Planning Board, acting as the special permit granting authority, may grant a special permit modifying the requirements of this section, provided it determines that such modification is consistent with the objectives set forth in § 220-36.2, Subsection A, in the following cases:

- (1) Where an applicant can demonstrate, by means of a history of vandalism or other objective means, that an extraordinary need for security exists;
- (2) Where an applicant can show that conditions hazardous to the public, such as steep embankments or stairs, may exist in traveled ways or areas;
- (3) Where a minor change is proposed to an existing, nonconforming lighting installation, such that it would be unreasonable to require replacement of the entire

installation; and

- (4) Where it can be demonstrated that, for reasons of the proposed use, the geometry of the lot, building or structure, strict conformance with this section is technically infeasible.