

Sec. 38-371. Purpose.

The purpose of this article is to reduce problems created by and associated with improperly designed and installed outdoor **lighting**. The standards and regulations of this article are established and intended to minimize problems associated with glare, light trespass, and skyglow, conserve energy, and promote safety and security. Outdoor **lighting** installed within the township shall be designed, located, installed and maintained in a manner to reduce or eliminate the shining of unnecessary direct light onto abutting and nearby properties or streets.

(Ord. No. 2002-13, § 1(129-1), 11-7-2002)

Sec. 38-372. Definitions.

Flood or spot-light: Any light fixture or lamp that incorporates a reflector or a refractor to concentrate the light output into a directed beam in a particular direction. For purposes of this article, floodlights and spot-light are considered a luminaire.

Footcandle: A measure of light falling upon a given surface. One footcandle is equal to one lumen per square foot. For purposes of this article footcandles shall be measured at approximately six feet above grade.

Fully shielded: Outdoor **lighting** fixtures designed or constructed so that no light rays are emitted at angles above the horizontal plane of the lowest direct-light emitting part of the luminaire as certified by the photometric report per section 38-377.

Glare: Stray light emitting from a luminaire, which is insufficiently shielded and which produces excessive luminance within the field of view.

Glare, disability: Stray light with an intensity great enough to reduce a viewer's ability to see or identify objects, and in extreme cases causing momentary blindness.

Illuminance value: The amount of measured light falling on a surface measured in footcandles.

Indirect light: Direct light that has been reflected or has scattered off of other surfaces.

Iso-illuminance curve: A line plotted on a set of coordinates to show all points on a surface where equal illuminances occur, also known as an iso-footcandle line or isodiagram.

Lamp: The component of a luminaire that produces the actual light.

Light meter: A device that measures the amount of light energy falling on a given surface.

Light trespass: The shining of light produced by a luminaire beyond the boundaries of the property on which the luminaire is located.

Lighting plan: A plan used for an approval process indicating all site improvements and the number, location, type, and design of all luminaires and the manufacturer's data on the luminaires.

Lumen: A measure of light energy generated by a light source. For purposes of this article, the lumen-output values shall be the initial lumen output rating of a lamp.

Luminaire: A complete **lighting** system consisting of a lamp or lamps together, with the parts, fixtures, and wiring designed to distribute the light, to position and protect the lamps, and to connect the lamps to the power supply. May also be referred to as a "fixture."

Nonconforming luminaire(s): Luminaires not conforming to the code requirements of this article that were in place prior to the effective date of this article.

Outdoor lighting: The night-time illumination of an outside area or object by any man-made device located outdoors that produces light by any means.

Photometric report: A plan prepared by an electrical engineer showing the locations of all luminaires on the subject site by means of either a numerical grid or iso-illuminance curve pattern of lighting levels in footcandles that the luminaires produce on the ground.

Skyglow: The halo effect given-off by outdoor lighting that is not shielded or from reflection off bright surfaces, including snow cover and which brightens the night sky over the affected area.

Uniformity ratio: The ratio of average illumination to minimum illumination.

(Ord. No. 2002-13, § 1(129-2), 11-7-2002)

Sec. 38-373. Applicability.

All public and private multiple-family residential and nonresidential outdoor lighting installed in the Charter Township of Meridian shall be in conformance with the requirements established under this article.

(Ord. No. 2002-13, § 1(129-3), 11-7-2002)

Sec. 38-374. General standards.

(a) All luminaires shall be fully shielded so that direct light cannot be emitted at angles above the horizontal plane of the lowest direct-light emitting part of the luminaire.

(1) Outdoor lighting regulated by this article shall incorporate shielding features such as, but not limited to baffles, louvers, caps, shrouds, or hoods to prevent direct glare, light trespass, and skyglow.

(2) Existing luminaires shall be retrofitted for compliance with the shielding requirements in a manner consistent with section 38-379.

(b) All luminaires shall be designed and located to direct light away from adjoining and nearby properties.

(c) The maximum height above the adjacent grade for luminaires, including poles, in multiple-family residential and nonresidential uses shall not exceed 25 feet.

(d) Floodlights and spot-lights shall be designed, shielded, installed and maintained in a manner that directs light downward and away from adjacent properties and streets. When employing floodlights and spot-lights, the use of motion detector systems is encouraged over continuous night-time lighting.

(e) Decorative architectural and landscape lighting shall be designed, fitted, and aimed so as not to project their light output beyond the objects intended to be illuminated and any lamp used for decorative, architectural or landscape lighting shall have a maximum wattage of 50 watts.

(f) Whenever practicable, outdoor lighting systems shall include timers, motion detectors, dimmers, and/or sensors to reduce overall energy consumption and eliminate unnecessary lighting.

(g) Outdoor lighting intensities and uniformity ratios, where required or permitted by this article shall be consistent with the following chart:

TABLE INSET:

Zoning	Maintained Footcandles	Uniformity Ratio
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		Average	Minimum
Multiple-Family Residential			
RD, RN, and RDD	0.2 minimum	4	1
RC and RCC	0.6 minimum	4	1
Nonresidential (Commercial/Industrial/Institutional/Municipal/Office)			
C-3, CS, CR, and I	0.9 minimum	4	1
C-2, PO, and RP	0.6 minimum	4	1
C-1	0.2 average	4	1
Nonresidential Uses in Residential Districts	0.2 average	4	1

* To calculate the average footcandles on a site, multiply maintained footcandles in the applicable zoning category times the average uniformity ratio.

(h) Illumination levels are maintained footcandles measured six feet above the grade.

(i) Maintained footcandles for on-site sidewalks shall average one-half footcandle.

(j) The maximum amount of nonnatural light perceptible at the property line shall not exceed one footcandle when adjoining or abutting a nonresidential use and one-half footcandle when adjoining or abutting a residential use. This standard does not apply to streetlights.

(k) The maximum amount of nonnatural light perceptible within the interior of the site shall not exceed five footcandles on the site except for the following:

(1) The maximum amount of nonnatural light perceptible under gas station canopies shall not exceed 20 footcandles.

(2) The maximum amount of nonnatural light perceptible on the site of a motor vehicle dealership shall not exceed 15 footcandles.

(3) The maximum amount of nonnatural light perceptible at building entrances and stairways/stairwells shall not exceed ten footcandles.

(Ord. No. 2002-13, § 1(129-4), 11-7-2002)

Sec. 38-375. Exemptions.

The following types of outdoor lighting are exempt from regulations of this article, but remain subject to the outdoor lighting not causing direct light from the luminaire towards residential structures or adjacent or nearby properties, or creating disability glare. In such case(s), the luminaire shall be redirected, shielded, or its light output controlled in a manner, which eliminates the glare condition.

(a) All temporary emergency lighting needed by police or fire departments, or other emergency services.

(b) All hazard warning luminaires required by and conforming to the standards of federal, state, or local regulatory agencies.

(c) Single-family and two-family residential lighting.

(d) Athletic fields.

(e) Window displays except in cases of nuisance glare and light trespass.

(Ord. No. 2002-13, § 1(129-5), 11-7-2002)

Sec. 38-376. Prohibited outdoor lighting.

The following uses shall be prohibited:

- (a) *Laser source light(s)*. The uses of laser light sources or similar high-intensity lighting for outdoor advertising or entertainment.
- (b) *Searchlights*. The operation of searchlights for advertising and entertainment purposes. This shall not include searchlights used for emergency purposes.
- (c) *Overhead electrical feeds to luminaires*. Overhead electrical feeds to luminaires, such as but not limited to parking lot lighting.

(Ord. No. 2002-13, § 1(129-6), 11-7-2002)

Sec. 38-377. Required lighting plans.

- (a) All multiple-family residential and nonresidential projects requiring special use permit and/or site plan review approval shall submit a lighting plan, which identifies all existing and proposed outdoor lighting on the site, the design and height of all luminaires and an iso-illuminance curve pattern photometric report showing footcandle intensity throughout the subject site.
- (b) All multiple-family residential and nonresidential building permit applications shall include information regarding proposed outdoor lighting, luminaire locations, and the light intensity planned for each luminaire. If necessary to insure compliance with the ordinance, the building official reviewing the building permit may also request a photometric report.

(Ord. No. 2002-13, § 1(129-7), 11-7-2002)

Sec. 38-378. Enforcement.

- (a) *Penalty*. A person who violates any provision of this article is responsible for a municipal civil infraction, subject to payment of a civil fine of \$75.00, plus costs including all direct and indirect expenses incurred by the township in connection with the municipal civil infraction as provided in section 2-106 et seq. However, in no case shall costs of less than \$9.00 or more than \$500.00 be ordered. Repeat offenses under this section shall be subject to increased fines as provided by section 1-8 of this Code. Each act of violation and every day upon which such violation should occur shall constitute a separate offense. Abatements shall not be considered as a fine payment or part of a violation's penalty.

- (b) *Authorized township officials*. In addition to the other enforcement methods provided by this article, township building inspectors and code enforcement officers are hereby designated as authorized township officials to issue municipal civil infraction citations or municipal civil infraction violation notices for violations of this article.

(Ord. No. 2002-13, § 1(129-8), 11-7-2002)

Sec. 38-379. Nonconforming outdoor lighting.

- (a) All luminaires lawfully in place prior to the effective date of this article which are not in compliance with its requirements may be maintained, repaired, and operated as legal nonconforming luminaires subject to the provisions of this section.
- (b) No nonconforming luminaire may be expanded, extended, changed in the frequency or timing of use, modified, moved, relocated, or redirected except as required by

subsection (c) of this section unless that nonconforming luminaire is then brought into compliance with the requirements of this article.

(c) No nonconforming luminaire may be returned to service after any discontinuance of use lasting for more than six consecutive months unless that nonconforming luminaire is first brought into compliance with the requirements of this article.

(d) Any nonconforming luminaire that causes or contributes to a disability glare as defined in this article shall be shielded or redirected as necessary to eliminate that disability glare.

(Ord. No. 2002-13, § 1(129-9), 11-7-2002)

Sec. 38-380. Appeal.

Any person aggrieved by an order, requirement, decision or determination of a township official as it relates to this article, may appeal to the township board in accordance with the following procedure:

(a) *Notice of appeal.* A written statement containing the specific reason for the appeal must be filed with the township clerk within ten days of the date of the decision sought to be appealed.

(b) *Hearing.* The township board shall hold a hearing on the appeal, which shall be open to public comment and shall include an opportunity for the appealing party to present their appeal.

(c) *Notice of hearing.* Notice of the time and place for consideration of an appeal shall be placed in a newspaper of general circulation in the township not less than five days prior to the date of the hearing. A notice shall also be sent by mail or personal delivery to the parties making the request. All notices shall be sent to addresses listed on the most recent assessment roll.

(d) *Decision.* The township board shall issue its decision on the appeal within a reasonable time. In its determination of the appeal, the township board may take, but is not limited to, any of the following actions:

1. Affirm the decision of the township official with or without modification and with or without such conditions as the board deems necessary or appropriate to further the intent and purposes of this article;
2. Reverse the decision of the township official and state its reasons for reversal;
3. Make any other decision, determination, order, or requirement that the township official could have made with respect to the subject matter of the appeal.

(e) *Notice of decision.* The township clerk shall notify the parties making the request in writing of the township board's decision.

(Ord. No. 2002-13, § 1(129-10), 11-7-2002)