

CITY OF MADISON OUTDOOR LIGHTING STANDARDS



Approval Process

Submit the following to the Zoning Counter in the Inspection Unit:

1. A catalog page, cut sheet, or photograph of the lighting fixtures, including the mounting method with a graphic depiction of the lamp concealment and light cutoff angles of the lighting fixture.
2. A photometric data report of the proposed lighting fixture graphically showing the distribution in all angles vertically and horizontally around the fixture (this is available from your lighting supplier).
3. A plot plan showing:
 - a. The location of all outdoor lighting fixtures proposed,
 - b. The mounting of installation height,
 - c. The overall illumination levels and uniformities,
 - d. The point where 0.5 horizontal footcandles occurs on the property or adjacent property at a distance four (4) feet above the ground.

This may be accomplished by means of an isolux curves or a photometric plot of the illumination levels.

Design Requirements – Open Parking Facilities

The illumination requirements of an open parking facility depend on the amount of usage the facility receives. Three levels of activity shall be established as high, medium, and low, reflecting both traffic and pedestrian activity. The following examples are nonexclusive and include:

High Activity (.12): Facilities for major league athletic events or major cultural or civic events.

Medium Activity (.10): Shopping centers, retail parking areas, hospital and clinic parking areas, transportation parking (airports, commuter lots, etc.), cultural, civic or recreational events, and fast food facilities.

Low Activity (.08): Employee parking, educational facility parking, office parks, and church parking.

- An outdoor lighting system for illuminating buildings and structures shall have a maximum connected lighting load of five (5) watts per lineal foot. Watts shall mean lamp wattage and ballast consumption.
- A residential site shall be lighted to provide at least .25 footcandles on any surface in the lot with an average illumination level of at least .75 footcandles. Outdoor light fixtures shall be designed and installed to minimize light trespass. In addition, the uniformity ration between the average illumination and minimum illumination shall be no greater than 4:1.
- For an outdoor merchandising area, the maximum level of 75% in the lot shall not exceed 20 footcandles. A contiguous area not to exceed 25% of the lot may be illuminated to a level which shall not exceed 40 footcandles.
- The maximum illumination level under an outdoor canopy shall not exceed 50 footcandles at any point.

HORIZONTAL ILLUMINANCES FOR PARKING FACILITIES

a. *Open Parking Facilities*

Level of Activity	Min. Footcandles on Pavement ¹	Max. Avg. Footcandles on Pavement	Max. Uniformity Ratio ¹ (Avg:Min)	Max Watts ² /Sq. Ft. Lighting Load ³	Min. Footcandles on Pavement ¹	Max. Avg. Footcandles on Pavement	Max Uniformity Ratio ¹ (Avg:Min)
High	0.6 fc	3.75 fc	5:1	.12	.67 fc	2.5 fc	5:1
Med	0.4 fc	2.50 fc	5:1	.10	.33 fc	1.5 fc	5:1
Low	0.2 fc	1.50 fc	5:1	.08	.125 fc	1.0 fc	5:1

b. *Covered Parking Facilities*

Areas	Minimum Footcandle Average on Pavement	Minimum Footcandles on Pavement	Maximum Average Footcandles on Pavement	Maximum Uniformity Ratio (Avg:Min)	Maximum Watts/Sq. Ft. Lighting Load
General parking & ped. areas	5 fc	1.25 fc	9 fc	4:1	.2
Private controlled entry parking	3 fc	.75 fc	6 fc	4:1	.2

- **The International Code Council, National Electrical Code, and others may have additional requirements.**
- **For further information, call Building Inspection at 266-4568.**

¹ Not mandatory within 4 feet of the pavement edge.

² Not mandatory for driveways

³ Watts shall mean lap wattage and ballast consumption.