



OUTDOOR LIGHTING GUIDELINES

To be used in preparing lighting plans as part of the Site Plan Review process.

As Germantown continues to grow, the proper design and maintenance of outdoor lighting is increasingly important. Continued residential, commercial and industrial growth has increased evening activity that requires nighttime illumination: residential traffic has increased, offices remain open later, industrial facilities have second and third shifts and services such as gas stations, grocery stores and ATM=s remain open 24 hours a day. Well planned lighting can help prevent accidents, deter crime and maintain an attractive community environment. Poorly designed lighting can cause accidents and be a detriment to a community=s image. Germantown desires to balance the need for increased lighting while maintaining the semi-rural character of the Village.

These guidelines provide the necessary guidance to meet Village goals. Rather than being overly prescriptive, they are performance-based, giving the designer maximum flexibility in developing acceptable lighting solutions.

PURPOSE

These guidelines serve as a benchmark for reviewing lighting plans submitted to the Plan Commission. The goal of these guidelines is to:

- X Reinforce a positive community identity by promoting continuity within the Village=s commercial and industrial districts;
- X Ensure the provision of adequate lighting to protect the public from criminal activity;
- X Facilitate safe movement by providing adequate levels of illumination for drivers and pedestrians;
- X Eliminate excessive and potentially dangerous glare caused by unshielded or poorly aimed light sources.

APPLICABILITY

These guidelines shall apply to all new construction in Germantown=s commercial, industrial, institutional and multi-family zoning districts. Additions and/or upgrades to existing lighting schemes (more than two fixtures) shall require Plan Commission review and shall be required to comply with these guidelines. Minor upgrades of 25% or less may be approved through the Building Inspector or Village Planner. Glare control shall apply to all zoning districts.

Holiday lighting between the months of November and February shall be exempt from these guidelines, although holiday decorations should not interfere with the safe operation of motor vehicles (block visibility at intersections, cause excessive glare to passing motorists, etc.).

Site Plan Review? All lighting plans must be approved by the Plan Commission. For a detailed checklist of submission requirements and for more information on applying to the Plan Commission for site plan approval, see the **SITE PLAN REVIEW** information packet or contact the Village Planner.

GENERAL GUIDELINES FOR ALL LIGHTING DESIGNS

A. Control of Nuisance/Disabling Glare

No lighting scheme shall cause unnecessary or disabling glare to motorists or pedestrians and all reasonable means shall be taken to prevent the projection of light onto neighboring properties.

- X Glare control should be accomplished primarily through the design and selection of appropriate lighting equipment. Only after technical means are exhausted, may a developer substitute vegetative screening, fencing or other indirect means to reduce glare and light trespass;
- X No fixture with an output of more than 2,000 lumens (approximately equivalent to a 150-watt incandescent bulb) shall be unshielded;
- X Luminaires with adjustable heads must be installed with fixtures perpendicular to the ground plane (0E tilt).

B. Color

Color rendition, or the effect of a light source on the appearance of objects compared to their appearance under normal daylight conditions, is greatly affected by the type of lamp used. The Village promotes natural color rendition, or a white light from artificial light sources.

- X Generally, metal halide lamps are the most energy efficient of the white light sources, and thus the most desirable.

C. Hours of Operation

- X Outdoor lights should be used only when necessary.
- X Hours of operation shall be limited to the hours of darkness between 6:00 AM and 11:00 PM, except under the following conditions:
 - S Commercial and industrial uses which remain open after 11:00 PM are permitted to keep outdoor lighting on up to 2 hour after employees leave;
 - S Approved security lighting may remain on after 11:00 PM;
 - S Recreational activities that continue past 11:00 PM may remain lit 2 hour past the conclusion of the event. Ballfield lights should be turned off within 15 minutes of the last game;
 - S On premise advertising signs may remain on after 11:00 PM if only if open for business.
- X The Plan Commission may require that lighting be controlled by a timing device or photo-electric control if concerns regarding compliance arise.

D. Installation

All outdoor lighting must meet applicable Village Codes and should be permanently installed. In addition, the following criteria should be met:

- X Electrical feeds to lighting standards should run underground, not overhead;
- X Lighting standards set in the perimeter of parking areas should be placed a minimum of five feet outside paved lot areas or five feet behind tire-stops;
- X Lighting standards in the middle of parking areas should be mounted on concrete pedestals at least 30" high, or protected by other acceptable means;

E. Maintenance

All exterior lighting shall be properly maintained and remain in good working order so as to meet the objectives of these guidelines.

GUIDELINES FOR SPECIFIC LIGHTING APPLICATIONS

To promote design innovation and creativity, the Plan Commission may consider designs/lighting schemes not outlined in these guidelines, provided they do not compromise the intent presented herein (higher poles, historic fixtures, etc.).

A. Open Parking Lot Lighting

Performance Guidelines: Parking lots should be designed to provide the minimum lighting necessary to facilitate the safe movement of pedestrians and vehicles within parking areas and prevent vandalism, auto theft and personal crime. Lots should be uniformly lit to prevent dark spots, shadows or excessive contrast.

Illumination Levels: Parking lots should be lit to meet current standards issued by the Illuminating Engineering Society of North America (IESNA). The following general guidelines should be used:

	Highest Activity Levels	Medium Activity Levels	Low Activity Levels
Typical activities	fast food restaurants gas stations convenience stores cultural/institutional facilities	community shopping centers hospital parking areas educational facilities banks, other services	local merchants industrial employee parking multi-family parking lots
Average maintained illumination levels	2.0 - 3.0 footcandles	1.0 - 2.0 footcandles	0.5 - 1.0 footcandles
Uniformity ratios	3:1 average/minimum (.66 f.c. minimum) 12:1 maximum/minimum (8.0 f.c. maximum)	3:1 average/minimum (.33 f.c. minimum) 12:1 maximum/minimum (4.0 f.c. maximum)	4:1 average/minimum (.125 f.c. minimum) 15:1 maximum/minimum (2.5 f.c. maximum)
Maximum light at property boundaries	0.5 footcandles	0.5 footcandles	0.5 footcandles

Luminaire Design: Pole fixtures may not exceed the height of the principal structure, or 25', whichever is less. Generally, cobra head fixtures are undesirable, although some designs with fully shielded bulbs may be acceptable. All fixtures should be of a full cut-off design, including wall mounted units.

B. Security Lighting

Performance Guidelines: Security lighting shall be designed to facilitate detection of intruders and risks to personal safety. Security lighting designed to create a sense of occupancy in buildings shall use the minimum light necessary to accomplish the task.

- X To the extent that a designated area is illuminated by lighting for other purposes, independent security lighting shall be discouraged.
- X Where security lighting is intended to light a perimeter such as a fence line, motion sensors should be used.

Illumination Levels: Security lighting should meet current standards issued by the Illuminating Engineering Society of North America (IESNA). The following general guidelines should be used:

Application	Light Level Needed
Active building entrances	5.0 footcandles max.
Infrequently used entrances	0.5 - 1.0 footcandles
Building grounds	0.5 - 1.0 footcandles
Industrial storage yards	0.5 - 1.0 footcandles
ATM	10 footcandles within 5' of ATM, then 2.0 f.c. for 50' surrounding machine, including parking area.

Luminaire Design: Full cut-off fixtures shall be used. Fixtures shall be shielded and aimed so that light is directed only to designated areas. Bare bulb flood lights shall not be used for security lighting.

C. Building/Landscape Accent Lighting

Performance Guidelines: Accent lighting can be used to highlight significant architectural or landscape features where approved by the Plan Commission. A Washing@ a building in light should be avoided. All fixtures should be carefully aimed to direct light only where needed.

Illumination Levels: The maximum illumination on any vertical wall surface or angular roof surface shall not exceed 2.5 footcandles. Light levels shall be limited to 0.1 footcandle at the roofline and exterior corners, so as to prevent light trespass and A skyglow.@

Luminaire Design: Full cut-off fixtures shall be used. Where practical, lights should be mounted to shine downward, rather than up onto buildings and landscape features. Where fixtures are used to A uplight@ trees and other landscape features, they should be fully shielded.

D. Sign Lighting

Performance Guidelines: External lighting of signs is preferred, however, internally lit signs are allowed. Internally lit signs should not become major sources of light in their own right. To this end, light letters and logos on dark backgrounds is preferred.

Illumination Levels: The average illumination on the surface of a sign shall not exceed 3.0 footcandles.

Luminaire Design: Fully shielded lights should be used and should shine downward on the sign where possible. The light source of any sign shall not be directly visible from the street or any adjacent properties (no bare bulbs). Fluorescent tubes used for internal lighting should be at least 4 inches from the translucent surface material and should be spaced to provide a maximum uniformity ratio of 2:1.

DEFINITIONS/EXAMPLES

Definitions

Candela: a unit of luminous intensity.

Cutoff: the point at which all light rays emitted from a light source are completely eliminated at a specific angle above the ground.

Cutoff Fixture: a lighting assembly with shields, reflectors or refractor panels that direct and cut off light at angles less than 90 degrees.

Efficacy: the ability of a lighting system to produce a desired result.

Fixture: the assembly that holds the lamp in a lighting system. It includes the housing, reflectors, ballast and attachment parts.

Footcandle: a unit of illumination produced on a surface, all points of which are one foot from a uniform point source of one candela.

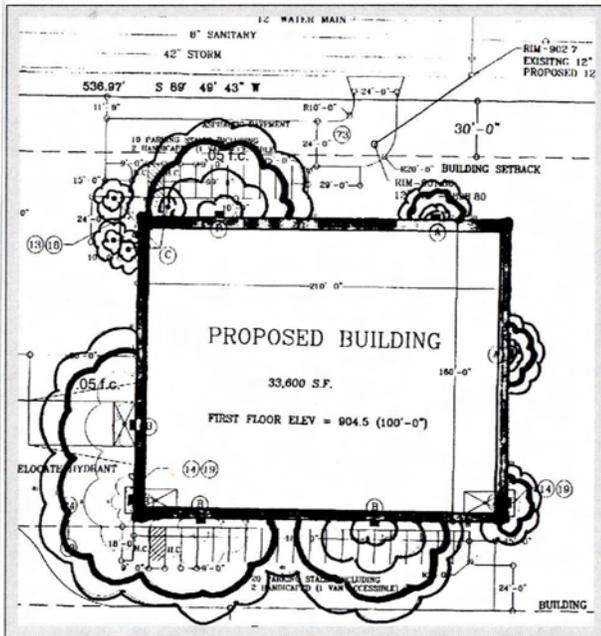
Glare: light emitting from a luminaire at an intensity great enough to reduce a viewer's ability to see, and in extreme cases, causing momentary blindness.

Light Trespass: light falling where it is not desired, e.g. beyond property boundaries, toward the sky, etc.; light spillover.

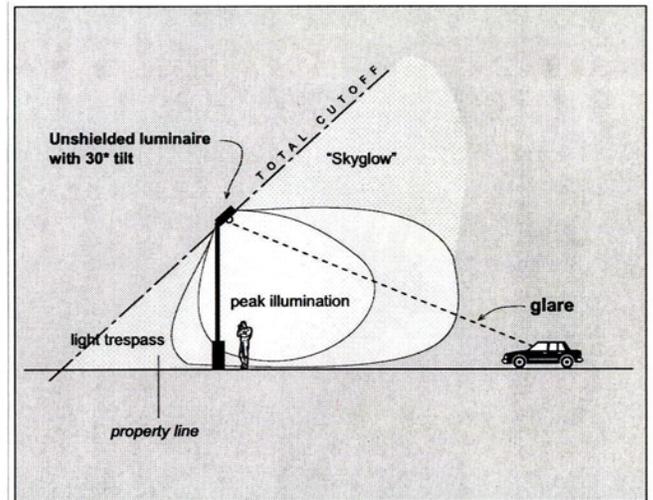
Luminaire: the complete lighting unit, including lamp and fixture.

Skyglow: a phenomenon caused by artificial light shining into the atmosphere, resulting in a brightening of the night sky.

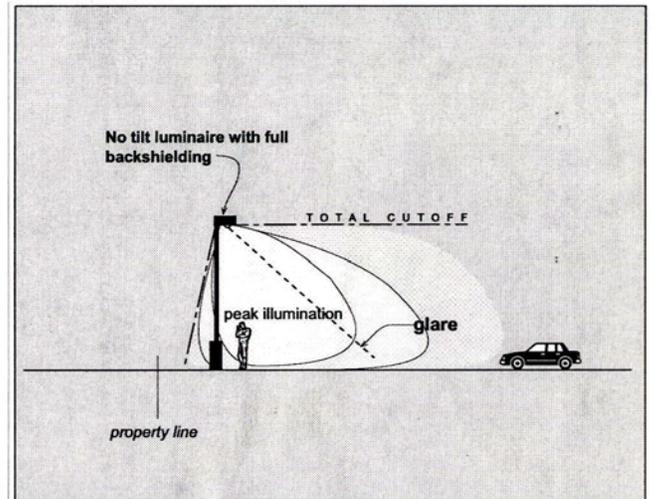
Lighting Plan Example



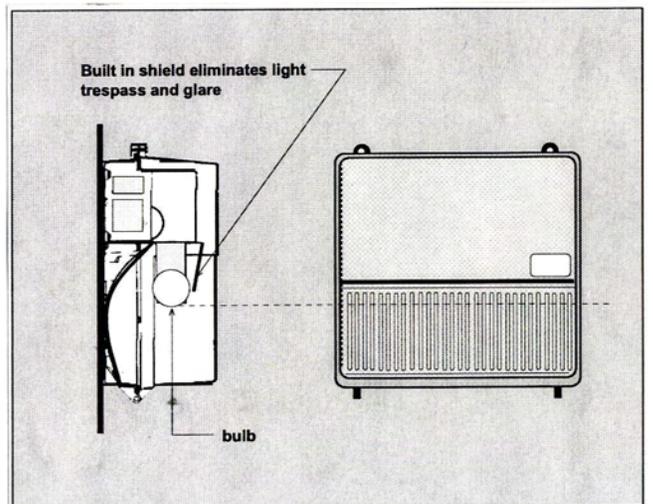
Unshielded Luminaire Causing Glare



Full Cutoff Luminaire

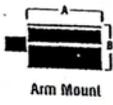


Wall Mounted Full Cutoff Luminaire



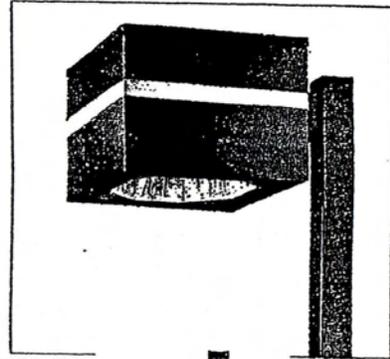
GREENBRIAR – FLAT LENS

DIMENSIONS



	A	B	C
GFR Arm Mount	21-5/8"	16"	—

Arm Mount



LUMINAIRE EPA CHART
Includes bracket.

	Pole Top Mount	Single	D90°	D180°	T90°	TN120°	Q90°
Green Briar Flat – 12" Arm Mount Bracket (GFR)	—	3.8	7.6	7.6	11.4	11.4	15.2

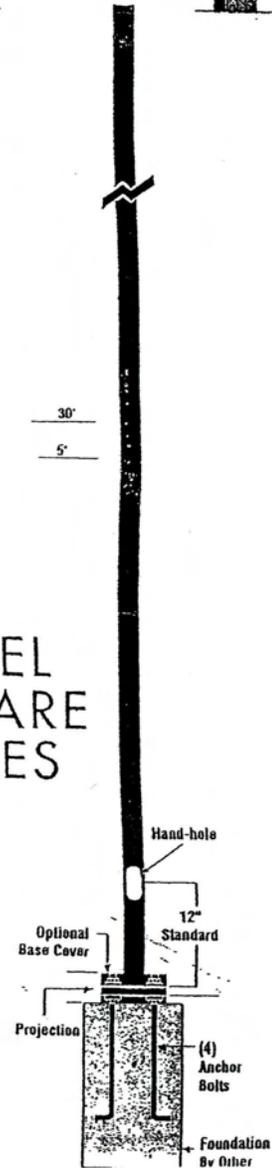
Reduced Vertical Burn	2 – Type II 3 – Type III	400	PSMV – Pulse-Start Metal Halide	Lens	Line Voltage ²	Luminaire Finish
GFR – Arm Mount	FP – Perimeter Forward Throw FA – Automotive 5 – Type V			F – Flat Clear Tempered Glass	480V MT – Multi Tap ³ TT – Tri-Tap ⁴	BRZ – Bronze

VILLAGE OF GERMANTOWN

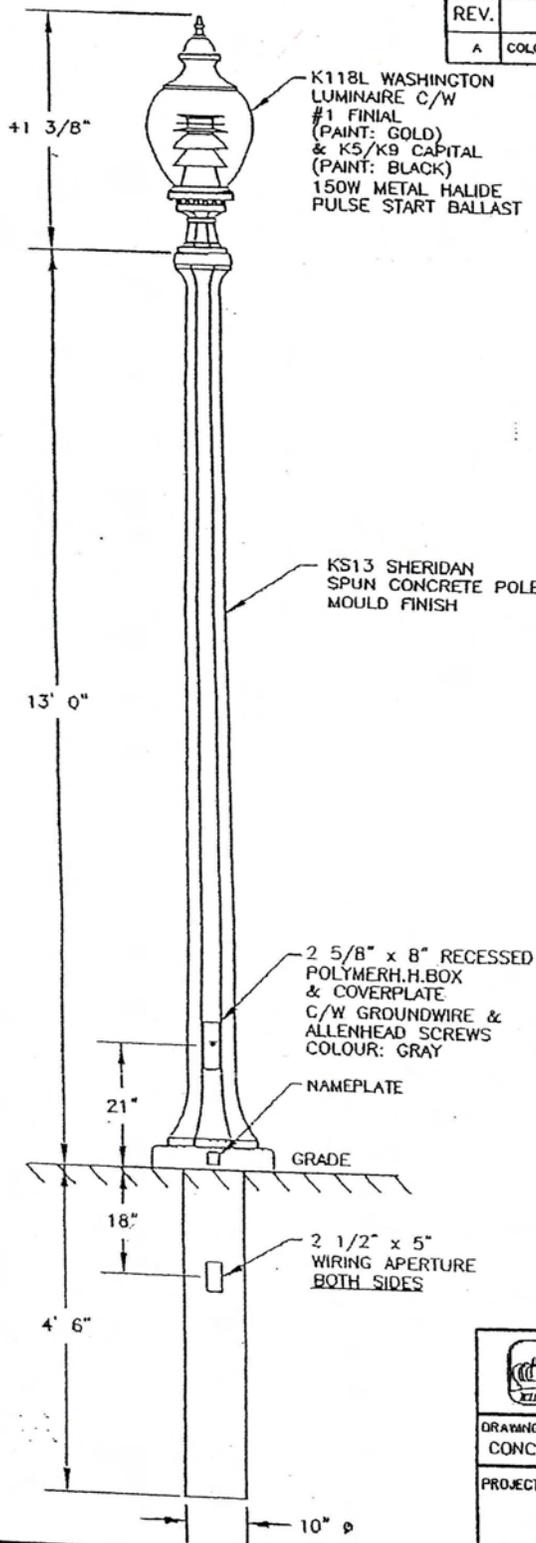
**COMMERCIAL OUTDOOR
LIGHTING STANDARDS**

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INFORMATION
CALL 1-800-524-3253**

**STEEL
SQUARE
POLES**



REV.	ALTERATION	E.C.N.	DATE	BY
A	COLOUR & BALLAST INFO. ADDED		07/31/02	AA



K118L WASHINGTON
LUMINAIRE C/W
#1 FINIAL
(PAINT: GOLD)
& K5/K9 CAPITAL
(PAINT: BLACK)
150W METAL HALIDE
PULSE START BALLAST

KS13 SHERIDAN
SPUN CONCRETE POLE
MOULD FINISH

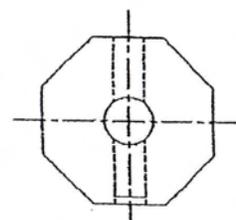
2 5/8" x 8" RECESSED
POLYMER H.B. BOX
& COVERPLATE
C/W GROUNDWIRE &
ALLENHEAD SCREWS
COLOUR: GRAY

NAMEPLATE

GRADE

2 1/2" x 5"
WIRING APERTURE
BOTH SIDES

**FOR ADDITIONAL SALES
INFORMATION
CALL 1-800-524-3253**



H.H. BOX
NAMEPLATE
THRU APERTURE
TOP VIEW

 KING LUMINAIRE <small>COMPANY INC.</small> <small>840 WALKER'S LINE, P.O. BOX 7, BURLINGTON, ONTARIO, CANADA L7R 3X9</small>					<small>P.O. BOX 268 JEFFERSON, OHIO 44113 1163 STATE ROUTE 44H U.S.A. 44017</small>				
DRAWING NAME:	DWG NUMBER	DATE:	DWG BY:	REV.					
CONCEPT DWG.	208A1815	07/29/02	A.A.	A					
PROJECT/CUSTOMER:									
VILLAGE OF GERMANTOWN STANDARDS									