

WELCOME AOLP 2013 CONFERENCE



Association of Outdoor Lighting Professionals®

UL 1838 & 2108, National Electrical Code,
AOLP LANDSCAPE LIGHTING GUIDELINES

Industry Regulatory Structure

The Rule Makers:

Underwriters Laboratories (UL,ETL,CSA)

National Fire Protection Association (NFPA)

State Legislatures/Agencies

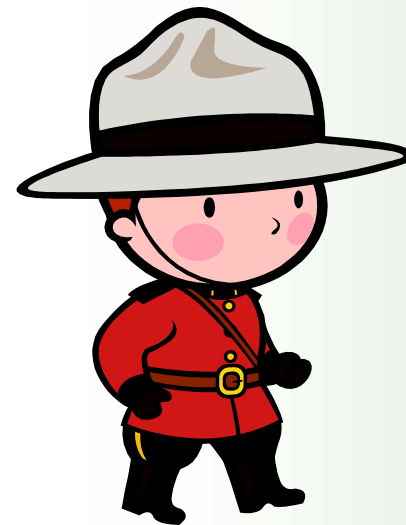
Trade Associations



Industry Regulatory Structure Enforcement

State/Local Government: Inspectors

Not the AOLP





Underwriters Laboratories

Product Manufacturing Standards

Product Performance Testing Standards



Edison Testing Labs, test to UL Standards



Canadian Standards Association

UL: Standards Technical Panel (STP)

Industry volunteers: manufacturers, associations, engineers, municipalities, consultants.



UL 1838

“Standard for Safety:
Low Voltage Landscape Lighting Systems”

Last revised July 2012

UL1838 SCOPE

“The requirements in this standard apply to a low-voltage landscape lighting system and components...

The equipment is intended to be installed in accordance with the NEC.”

UL1838 SCOPE CON'T.

The luminaires...are intended for garden, walkway, patio areas, or similar outdoor locations...



UL 1838 SCOPE CON'T

LANDSCAPE LIGHTING POWER UNITS:

“Power units covered by this standard have a maximum output circuit voltage as specified in Table 2A.1”

Table 2A.1

(revised July, 2012)

Maximum voltage considered not a risk of electric shock, and the maximum permitted output circuit voltage for landscape lighting systems.

Voltage type, Maximum Voltage
Sinusoidal ac, 15 V



UL 1838 Revisions July 2012

Add reference to UL 8750 for LED components

Clarify Rain Test requirements

Clarify Immersion Test requirements

Clarify marking requirements for power units

UL 2108

“Low Voltage Lighting Systems”

Scope: These requirements apply to low voltage lighting systems and components intended for permanent installation and for use in locations in accordance with the NEC Article 411.

UL 2108

Low Voltage Lighting Systems

Last Revised: April 2011

Question:

How important is a UL listing to your product selection?



National Fire Protection Assoc. (NFPA) National Electrical Code (NEC)

NFPA develops and publishes the regulations for the installation of various electrical products.

NEC is the document that results from the above.

Informational Resource: MIKEHOLT.COM

NEC Article 411 (1996)

“To provide a separate article for Low-Voltage lighting systems designed and listed as a complete system.”

ARTICLE 411

NEC Article 411.2 - Low Voltage Transformer Circuits: limited to 25 amperes max. and a max Voltage of 30v (ac/dc).

NEC Article 411

NEC 411.3 – Requires that all Low Voltage Lighting systems be listed “for the intended purpose.”

Top Three: Low Voltage NEC Code Violations

1) Pools, Spas and Fountains.

NEC Article 411

NEC 411.4(2) – Does not permit Low Voltage Lighting Systems within 10' of Pools, Spas, and Fountains. Unless permitted by NEC 680.22(B)

NEC Article 680

NEC 680.22(B) – “any Luminaire installed within 5 feet horizontally of the pool edge must be located at least 12 feet above the maximum water level of the pool.”

NEC Article 680

NEC 680.22(B)(4) – permits luminaires to be installed within 5 feet horizontally only where a ground fault interrupter (GFCI) protects the Luminaire.

Top Three: NEC Most Frequent Code Violations

2) Wire Depth: How Deep is enough?

NEC Article 300

NEC 300.5(A)- Wire must be buried at least 6" below grade and at least 18" when under residential driveways or outdoor parking areas.

Top Three: NEC Most Frequent Code Violations

3) Outlet Covers

NEC Article 406

NEC 406.8(B)(2)(a) – Requires a waterproof cover on all “Wet Location” outlets.

Enforcement: States that have not adopted the NEC Statewide (2010)

Alabama

Arizona

Hawaii

Illinois

Kansas

Maryland

Mississippi

Missouri

Nevada.



State Legislatures/Agencies

Legislative Role: Determine the need and requirements for Industry Regulation and Licensing.

State Agencies: Promulgate the rules to implement.

Licensing:

HOT TOPIC in many States:

What is the role of AOLP?



Industry Trade Associations:

AOLP Has Limited Authority

AOLP Can: Establish Best Practices,
Certifications and Guidelines.



AOLP Landscape Lighting Guidelines:

Revised March 2012

“These guidelines **shall not supersede** any regulation found within the NEC or any other governmental agency, municipal code or ordinance.”

AOLP Landscape Lighting Guidelines

Purpose: To Provide standards where none exist.

AOLP Landscape Lighting Guidelines

For Use by **Contractor and Consumer**

Intent: “to improve practices and professionalism within the trade, and specific understanding between all parties.”

AOLP Landscape Lighting Guidelines

Four Key Areas:

1)Design

2)Installation

3)Maintenance

4)Safety

AOLP Landscape Lighting Guidelines

DESIGN:

Lighting Plan – What, Where, When, Who.

Plans should also include:

- 1) Necessary equipment/materials
- 2) Focal Point Locations
- 3) Electrical load calculations
- 4) Installation details

AOLP Landscape Lighting Guidelines

Installation Agreement:

Property Location

Scope of Work

Material Specs

Project Cost/Price

Begin and End Dates

Warranty Information

AOLP Landscape Lighting Guidelines

Maintenance:

Warranty for one year from date of install.

Formal Maintenance agreement

AOLP Landscape Lighting Guidelines

Safety:

Abide by all local regulations, codes, and ordinances.

Mark all utilities before installation.

Keep Insurance current



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THANK YOU