

SUMMARY OF TOPICS

The following changes in requirements to the Standard for Seasonal and Holiday Decorative Products, UL 588, are being proposed:

1. Parallel-Connected Lighting Strings Employing 18 AWG Conductors

2. Glass LED Lamps Used in Parallel-connected or Series-Connected Lighting Strings

STP BALLOTS AND ALL COMMENTS DUE: July 16, 2018

For your convenience in review, proposed additions to existing requirements are shown underlined and proposed deletions are shown ~~lined-out~~.

1. Parallel-Connected Lighting Strings Employing 18 AWG Conductors

RATIONALE

Proposal submitted by: Anthony Tassone, UL LLC

UL 588 was recently revised to increase the permitted ampacity of 18 AWG to 8 amps as shown in Table 13.1. However, the requirements for the interconnection of parallel-connected lighting strings were not updated to reflect the higher wattage permitted when employing 18 AWG wire. Paragraph 125.5.1 is being revised to align with the 1.8 A, 216 W requirements elsewhere in the Standard and deletes the reference to the number of lamps that can be interconnected to be consistent with Paragraph 29.1.

It is the opinion of the proposal submitter that this proposal contains a construction requirement revision or clarification.

PROPOSAL

Table 13.1
Maximum conductor current and overcurrent protection

Wire size, AWG (mm ²)	Maximum conductor current / wattage amperes / watts	Overcurrent protection amperes
12 (3.31)	<u>12 / 1440</u>	N/A
14 (2.08)	<u>12 / 1440</u>	N/A
16 (1.31)	<u>10 / 1200</u>	10 ^b
18 (0.82)	<u>8^a / 960</u>	8 ^a
20 (0.52)	<u>3.6 / 432</u>	5
22 (0.32)	<u>1.8 / 216</u>	3
^a When an 8 A fuse is employed, the maximum current shall not exceed 8 A. When a 5 A fuse is employed, the maximum current shall not exceed 3.6 A.		

Table 13.1 Continued

Wire size, AWG (mm ²)	Maximum conductor current / <u>wattage</u> amperes / <u>watts</u>	Overcurrent protection amperes
^b Overcurrent is required only when more than 3 load fittings are employed. A maximum of 6 load fittings are permitted when overcurrent protection is provided.		

29.1 A parallel-connected string shall employ only intermediate- or candelabra-screw lampholders, and shall have at least 7 lampholders, and ~~but~~ the total wattage of the lighting string shall not exceed 216 Watts (1.8 A) when a cord connector is provided or 432 Watts (3.6 A) when no cord connector is provided the conductor current as indicated in Table 13.1.

125.4.3 A lighting string or a decorative outfit consisting of a lighting string with decorative covers which that employs a polarized load fitting shall be marked within 3 inches (76.2 mm) of the face of the load fitting with the word "CAUTION" and the following: "This lighting string is rated ____ Watts (____ Amps), do not overload. Connect other lighting strings or decorative outfits end-to-end up to a maximum of 432 ____ Watts (3.6 ____ Amps) total." The first blank shall be filled in with the rated wattage of the product. The second blank shall be filled in with the rated amperage of the product. The third blank shall be filled in with the conductor wattage based on 120 V times the maximum conductor current described in Table 13.1. The fourth blank shall be filled in with the maximum total current in Amps described in Table 13.1. Additional instructions shall be provided with the user servicing instructions to further explain the wattage, where to find the wattage rating on the product and where to find the current rating on products that do not contain a wattage rating.

125.5.1 A product with an input current in excess of ~~1.75~~ 1.8 A or ~~which employs more than 30 parallel-connected lampholders,~~ shall be marked with the following: "CAUTION – Do not connect to another lighting string, decorative outfit, or seasonal product."

2. Glass LED Lamps Used in Parallel-connected or Series-Connected Lighting Strings

RATIONALE

Proposal submitted by: Anthony Tassone, UL LLC

With traditional incandescent lamps, the issue of lamp damage was straightforward: once the outer glass envelope was damaged, the lamp ceased to work. In addition, due to the nature of these lamps any damage tended to be severe and visually apparent to an end-user. After many decades of incandescent lamp use, the need to discard damaged lamps without first energizing them is considered self-evident and deeply ingrained in the general public. With the advent of LED lamps, an end-user's behavior was less predictable. LED lamps can be constructed similar to traditional lamps using a glass envelope to enclose uninsulated live parts. Damage to glass envelope (outer enclosure) does not necessarily prevent normal lamp illumination. This can increase the likelihood that end-users were likely to energize lamps after an impact to determine if they were still useable. This made any enclosure damage a potential shock hazard. However, since the glass LED lamps are now designed and constructed to resemble traditional incandescent light bulbs, they tend to shatter or become substantially damaged when they are dropped thereby increasing the likelihood that the end-users behavior would be similar to the behavior when traditional lamps break.

It is the opinion of the proposal submitter that this proposal contains a new test requirement, a new construction requirement, and a marking requirement.