

Subject 1971

June 1, 2018

SUMMARY OF TOPICS

The following changes in requirements to the Standard for Signaling Devices for the Hearing Impaired, UL 1971, are being proposed:

1. Revision to the Signal Strength and Format Test to Address LED Strobes

STP BALLOTS AND ALL COMMENTS DUE: JULY 2, 2018

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

1. Revision to the Signal Strength and Format Test to Address LED Strobes

RATIONALE

Proposal submitted by: Dan Grosch, UL LLC, on behalf of the STP 464 Task Group on Indirect Viewing of Visual Signals

A task group on Indirect Viewing of Visual Signals was formed in response to two reports (Savage, 2011; Bullough et al., 2012) suggesting that indirect alerting with fire alarm visual notification appliances (i.e., strobes) with long pulse durations was inadequate despite their meeting the current requirements for flash effective intensity expressed in effective candela (cd). The accompanying "White Paper – Indirect Viewing of LED Emergency Notification Signals" explains the research that supports this proposal.

Note: Please see the Supporting Documentation in the UL 1971 CSDS Work Area to access the aforementioned white paper.

PROPOSAL

27 Signal Strength and Format Test

27.1.3 The following minimum signal strengths shall be met:

a) Signaling lights shall produce a candela output in effective intensity in accordance with Tables 27.1 – 27.3 and Figures 27.1 – 27.3. The flash rate shall not be less than 1 hertz or greater than 2 hertz over the rated operating voltage range. The maximum light pulse duration shall be 200 ms. Rated light output is to be based on a maximum 20 ms light pulse. For pulse durations between 20 ms and 200 ms, an effective candela equivalency to a 20 ms light output is determined by dividing the measured light output value by the corresponding multiplier in Table 27.4. Light output ratings for pulse widths less than 20 ms are the measured value obtained in 27.2.1. The light output shall be white light. The measurement of light output shall be in accordance with the procedure described in 27.2.1 – 27.2.4.

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b) A vibration unit (not worn) shall produce a radial displacement of 1/8 inch (3.2 mm) minimum. The vibration frequency shall be within a range of 60 – 120 hertz. The vibration device shall have a cross-sectional area of at least 6 square inches (38.7 cm²) for at least one of its three dimensional planes and that plane shall have linear dimensions not less than 1-3/8 inches (34.9 mm).

c) Air movement systems shall produce a minimum air peak velocity of 270 feet (82 m) per minute at a distance of 5 feet (1.5 m). The signal shall vary from zero air movement to peak velocity at a frequency of 15 – 20 cycles per minute. The pattern shall impact a full 2-foot square (0.372-m²) area.

(NEW)

Table 27.4
Effective candela ratings

Light pulse duration (msec)	Device rating required effective candela multiplier	Light pulse duration (msec)	Device rating required effective candela multiplier
20	1.00	115	4.02
25	1.22	120	4.13
30	1.43	125	4.23
35	1.64	130	4.33
40	1.83	135	4.43
45	2.02	140	4.53
50	2.20	145	4.62
55	2.37	150	4.71
60	2.54	155	4.80
65	2.70	160	4.89
70	2.85	165	4.97
75	3.00	170	5.05
80	3.14	175	5.13
85	3.28	180	5.21
90	3.41	185	5.29
95	3.54	190	5.36
100	3.67	195	5.43
105	3.79	2.00	5.50
110	3.90		

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