

MEETING OF THE TECHNICAL COMMITTEE ON ELECTRONIC SAFETY EQUIPMENT

13-14 JANUARY 2011
SAN DIEGO, CA

AGENDA

ROP MEETING FOR NFPA 1801 *Standard on Thermal Imagers for the Fire Service*

THURSDAY, 13 JANUARY (continuing through to close of business on Friday 14 January)

1. **09.00**, Call to Order - Chairman Bruce Varner
2. Introduction of Members and Guests
3. NFPA Staff Liaison Report, Policies, Procedures - Dave Trebisacci
4. Approval of the Minutes of the 25-26 June 2010 TC meeting, Portland, ME
5. Chairman's Remarks, Bruce Varner
 - Processing NFPA 1801 TIA and Errata
 - NFPA 1982 (1802) status and work plan
6. Task group on Alarm Sounds* – Report
7. Task group on Intrinsic Safety* – Report
8. Review of NFPA process for handling Public Proposals and Committee Proposals
9. Review and discussion of Public Proposals received on NFPA 1801
10. Review and discussion on Committee Proposals for NFPA 1801
11. Future document(s) discussion
12. Old Business

13. New Business

- Next TC meeting - select dates, suggest locations
- Other

14. Adjourn at close of business on Friday, 14 January.

**** It is estimated that the meeting will fill both days. Task groups that need to meet should plan on early morning, lunch or evening meetings.***

1801- Log #1 FAE-ELS
(B.1.2.3)

Final Action:

Submitter: John F. Bender, Underwriters Laboratories Inc.

Recommendation: Revise text to read as follows:

B.1.2.3 UL Publications. Underwriters Laboratories Inc., 333 Pfcngsten Road, Northbrook, IL 60062-2096

UL 1642, Standard for Lithium Batteries, 2005, Revised 2009.

UL 2054, Standard for Household and Commercial Batteries, 2004, Revised 2009.

Substantiation: Update referenced standards to most recent revisions.

1801- Log #2 FAE-ELS
(Table 4.3.9)

Final Action:

Submitter: Landon Borders, Bullard

Recommendation: Revise table as follows:

****Insert Table 4.3.9 Here****

Substantiation: Remove the FOV test from specimens 1-3. This is redundant and unnecessary since it will be tested on specimens 7-9. Modify specimen requirements for the vibration test to be consistent with the Heat Resistance specimen requirements.

1801- Log #3 FAE-ELS
(7.1.7)

Final Action:

Submitter: Landon Borders, Bullard

Recommendation: Delete the following text:

~~7.1.7 Thermal imagers shall be tested for ingress protection (IP) rating as specified in IEC 60529, Degrees of protection provided by enclosures (IP Code), and shall have a rating of IP6X.~~

Substantiation: Testing for an IP rating of IP6X is unnecessary. The thermal imager is sufficiently tested for ingress during the Durability Test described in section 8.13, specifically during the dunk test described in sections 8.13.5.7, 8.13.5.7.2 and 8.13.5.8.3.

1801- Log #4 FAE-ELS
(8.1.6.4.1)

Final Action:

Submitter: Landon Borders, Bullard

Recommendation: Revise text to read as follows:

~~The spatial resolution source target for e~~One randomly chosen specimen shall be rotated 180 degrees, such that the lower indices appear on the right side of the ~~spatial resolution source target~~ specimen's display. All other components of the equipment setup shall remain unchanged.

Substantiation: It is impractical to rotate the spatial resolution target due to its size and weight. Rotating the thermal imager 180 degrees accomplishes the same intent.

Table 4.3.9 Test Matrix for Thermal Imagers

Test Order	Specimens 1-3	Specimens 4-6	Specimens 7-9	Specimens 10-12	Specimens 13-15	Specimens 16-18
1	Field of View Measurement Section 8.11 Specimens 1-3	Cable Pullout Test Section 8.9 Specimens 4-6	Field of View Measurement Section 8.11 Specimens 7-9	Heat Resistance Test Section 8.6 Specimen 10	Vibration Test Section 8.2 Specimens 13-15	Durability Test Section 8.13 Specimens 16-18
2	Image Recognition Test Section 8.1 Specimens 1-3	Impact Acceleration Resistance Test — Ambient Section 8.3 Specimen 4	Corrosion Test Section 8.4 Specimens 7-9	Heat Resistance Test Section 8.6 Specimen 11	Vibration Test Section 8.2 Specimens 13-15 13 14	Product Label Durability Test Section 8.8 Specimens 16-18
3	Image Color and Effective Temperature Range Test Section 8.10 Specimens 1-3	Impact Acceleration Resistance Test — Cold Section 8.3 Specimen 5	Product Label Durability Test Section 8.8 Specimens 7-9	Heat Resistance Test Section 8.6 Specimen 12	Vibration Test Section 8.2 Specimens 13-15	—
4	Thermal Sensitivity Test Section 8.12 Specimens 1-3	Impact Acceleration Resistance Test — Elevated Temperature Section 8.3 Specimen 6	—	Product Label Durability Test Section 8.8 Specimens 10-12	—	—
5	Heat and Flame Test Section 8.7 Specimen 1-3	—	—	—	—	—

1801- Log #5 FAE-ELS
(8.1.6.11)

Final Action:

Submitter: Landon Borders, Bullard

Recommendation: Revise text to read as follows:

The captured images shall be rotated ~~45 degrees~~ such that the centerline of the converging lines of interest is vertical. The contrast transfer function (*CTF*) and the mean pixel intensity (μ) of the two sets of converging lines of the stencil pattern in the captured images shall be calculated at each of the numbered indices, beginning at 1 and ending at 9. ~~A Regions~~ Regions of interest that encloses each of the two sets of converging lines of the stencil pattern shall be used to select pixels for analysis.

Substantiation: The intent is to rotate the converging lines such that the center line is vertical. This is not necessarily accomplished by rotating the image 45 degrees.

There is more than one region of interest, so the last sentence should be pluralized.

1801- Log #6 FAE-ELS
(8.1.6.20)

Final Action:

Submitter: Landon Borders, Bullard

Recommendation: Revise text to read as follows:

The image quality probability (*PIQ*) shall be calculated for the nonuniformity procedure at setpoint temperatures of 1°C, 30°C, 100°C, 160°C, and 260°C (34°F, 86°F, 212°F, 320°F, and 500°F) as specified in Equation 8.1.6.19, where *C* is the *CTF* calculated at index 1 in 8.1.6.12, *B* is the average ~~brightness~~ mean pixel intensity μ calculated ~~in 8.1.6.14 in 8.1.5.14b for NU(1), NU(1), NU(30), NU(100), NU(160), and NU(260)~~, *SR* is the spatial resolution calculated in 8.1.6.18, and *UN* is the nonuniformity value calculated in 8.1.5.16, NU(1), NU(30), NU(100), NU(160), and NU(260).

Substantiation: The image quality probability "B" coefficient calculation was improperly reported in the 1st edition for the uniformity procedure.

1801- Log #7 FAE-ELS
(8.10.4.3.1)

Final Action:

Submitter: Landon Borders, Bullard

Recommendation: Revise text to read as follows:

The surface labeled *T*_{hot} shall range in temperature from ~~ambient 50°C (122°F)~~ to 550°C (1022°F) and shall fill at least 50 percent of the FOV. The radiation source producing the *T*_{hot} surface shall be a blackbody and shall have an emissivity of 0.95, ±0.03. The source target shall be calibrated at least every 6 months. The nonuniformity of the blackbody shall not exceed 0.02. The blackbody temperature accuracy shall be ±0.5°C (±1°F). The stability of the emitting surface temperatures shall be 0.15°C. The nonuniformity of the blackbody.

Substantiation: Blackbodies that meet the performance criteria detailed in this test are not typically designed for calibration below 50°C. The certified laboratories cannot perform tests using equipment operated outside of its calibrated range.

1801- Log #8 FAE-ELS
(8.10.5.5)

Final Action:

Submitter: Landon Borders, Bullard

Recommendation: Revise text to read as follows:

8.10.5.5 All surface temperatures in the FOV shall be ~~adjusted to set at~~ set at the assigned temperatures and shall be allowed to come to steady-state prior to starting the test.

Substantiation: Add clarification that the blackbodies must be steady state prior to the test and not during the test.