UL 1480A

STANDARD FOR SAFETY

Speakers for Commercial and Professional Use

UL Standard for Safety for Speakers for Commercial and Professional Use, UL 1480A

First Edition, Dated February 3, 2016

Summary of Topics

This revision of ANSI/UL 1480A dated March 24, 2021 is being issued to update the title page to reflect the most recent designation as a Reaffirmed American National Standard (ANS). No technical changes have been made.

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin.

The requirements are substantially in accordance with Proposal(s) on this subject dated January 8, 2021.

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UL 1480A

Standard for Speakers for Commercial and Professional Use

Prior to this first edition, the requirements for the products covered by this standard were included in the Standard for Speakers for Fire Alarm, Emergency, and Commercial and Professional Use, UL 1480.

First Edition

February 3, 2016

This ANSI/UL Standard for Safety consists of the First Edition including revisions through March 24, 2021.

The most recent designation of ANSI/UL 1480A as a Reaffirmed American National Standard (ANS) occurred on March 24, 2021. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at https://csds.ul.com.

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INTRODUCTION

1 Scope

1.1 These requirements cover speakers for indoor and/or outdoor use in dry, damp, wet, or underwater locations and are intended for one or more of the following:

a) Commercial and professional audio systems providing non-emergency sound reinforcement and reproduction in accordance with the National Electrical Code, NFPA 70 (this includes equipment for institutional, industrial use);

b) Non-fire emergency voice-warning systems in accordance with NFPA 70; examples of non-fire emergency-warning systems include, but are not limited to:

1) Critical process monitoring (nuclear plant, oil refinery, hazardous chemical processing);

2) Distress alert systems (help for handicapped, for life safety, for rape, for robbery);

3) Crowd control in public places (sporting arena, theater, shopping mall, transportation center); and

4) Non-fire emergency voice-systems covered by the Life Safety Code, NFPA 101.

c) Underwater speakers in accordance with Article 680 of NFPA 70. An underwater speaker is not to be used in a fire alarm system or as an emergency (non-fire) voice-warning system.

1.2 These requirements do not cover the following:

a) Speakers intended for use in hazardous locations as defined in the National Electrical Code, NFPA 70; this includes speakers tested with the requirements in the Standard for Explosion-Proof and Dust-Ignition-Proof Electrical Equipment For Use In Hazardous (Classified) Locations, UL 1203;

b) Speakers intended for personal or private consumer use; this includes speakers for household/domestic use covered by the requirements in the Standard for Audio-Video Products and Accessories, UL 1492 and the Standard for Audio/Video and Musical Instrument Apparatus for Household, Commercial, and Similar General Use, UL 6500;

c) Speakers which are intended for commercial or professional audio applications and which employ integral active electronics; these products are covered in the Standard for Commercial Audio Equipment, UL 813; the Standard for Professional Video and Audio Equipment, UL 1419; and the commercial audio amplifier applications covered in UL 6500; and

d) Speakers intended for security applications; these products are covered in the Standard for Local Burglar Alarm Units and Systems, UL 609; and the Standard for Household Burglar-Alarm System Units, UL 1023.

1.3 Speakers intended for use with fire alarm systems are covered by Standard for Speakers for Fire Alarm and Signaling Systems, Including Accessories, UL 1480. Speakers with integral amplifiers must comply with the requirements in UL 1480 and the Standard for Amplifiers for Fire Protective Signaling Systems, UL 1711.

1.4 Speakers intended for use with emergency and non-emergency systems and having integral amplifiers must comply with this standard in addition to the requirements in the Standard for General-Purpose Signaling Devices and Systems, UL 2017.

1.5 Speakers intended for use in air-handling spaces in accordance with Installation of Air Conditioning and Ventilating Systems, NFPA 90A, shall comply with the requirements in this standard and the requirements in the Standard for Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces, UL 2043.

2 General

2.1 Components

2.1.1 Except as indicated in 2.1.2, a component of a product covered by this standard shall comply with the requirements for that component. See Appendix A for a list of standards covering components generally used in the products covered by this standard.

2.1.2 A component is not required to comply with a specific requirement that:

a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or

b) Is superseded by a requirement in this standard.

2.1.3 A component shall be used in accordance with its rating established for the intended conditions of use.

2.1.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

2.2 Units of measurement

2.2.1 Unless otherwise indicated, all voltage and current values mentioned in this standard are rms.

2.2.2 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

2.3 Undated references

2.3.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

3 Glossary

3.1 For the purpose of this standard, the following definitions apply.

3.2 AUDIO CIRCUITS (HIGH-VOLTAGE) – Commercial or professional speakers for connection in accordance with Article 640 of the National Electrical Code, ANSI/NFPA 70, that are used for music or voice communication and are rated more than 120 volts.

3.3 AUDIO CIRCUITS (LOW-VOLTAGE) – Commercial or professional speakers for connection in accordance with Article 640 of the National Electrical Code, ANSI/NFPA 70, that are used for music or voice communication and are rated 120 volts or less.

3.4 BI-AMPLIFIED SYSTEMS – Systems that employ two or more speakers that are cross-overed before the amplifier with separate amplifiers powering the low and high frequency transducers.

3.5 CHEESECLOTH INDICATORS – Cheesecloth used for tests shall be untreated cotton cloth running 14 – 15 square yards per pound (26 – 28 square meters per kilogram) and having what is known in the trade as a "count of 32 by 28".

3.6 CRITICAL COMPONENT – With regard to the risk of fire and electric shock, a critical component is a part that:

a) Encloses a high-voltage part(s);

b) Is capable of coming into contact with a source of ignition;

c) Supports a live part; or

d) Is capable of coming into contact with a live part.

3.7 DISTRIBUTED AUDIO SYSTEMS – Distributed audio systems, also referred to as constant voltage systems, provide a constant voltage from the amplifier to the speaker and usually have long wire runs between the amplifier and the speakers. Typical distributed audio voltages are 25, 70, or 100 volts.

3.8 ELECTRICAL CIRCUIT (HIGH-VOLTAGE) – A circuit other than audio involving a potential of not more than 300 volts and having circuit characteristics in excess of those of a low-voltage circuit.

3.9 ELECTRICAL CIRCUIT (LIVE PART) – A conductive part of a circuit carrying (or having the potential to carry) voltage, power, or current of sufficient magnitude to present a risk of fire or electric shock.

3.10 ELECTRICAL CIRCUIT (LOW-VOLTAGE) – A circuit other than audio involving a potential of not more than 30 volts alternating-current (AC) rms, 42.4 volts direct-current (DC) or AC peak.

3.11 FIELD-WIRING LEADS – Leads to which electrical connections are made in the field.

3.12 FIELD-WIRING TERMINALS – Terminals to which electrical connections are made in the field.

3.13 INSTALLATION LOCATIONS:

a) Dry – A location with a controlled ambient that is not subject to dampness or wetness.

b) Damp – A location protected from sun, rain, and water, but subject to moisture (such as basements, barns, cold-storage warehouses, greenhouses, indoor swimming facilities, and similar locations); may also include partially protected locations under canopies, marquees, roofed open porches, and similar spaces.

c) Wet – A location subject to rain and the spray of non-corrosive and non-flammable liquids that may become saturated with water or that is unprotected from the weather.

d) Underwater – A location such as a swimming pool or diving tank.

3.14 NON-DISTRIBUTED AUDIO (LOW IMPEDANCE) SYSTEMS – Non-distributed audio systems are low impedance systems with short wire runs between the amplifier and the speaker. Typical impedance for these systems are 4, 8, or 16 ohms.

3.15 PINK NOISE – Broadband noise whose energy content is inversely proportional to frequency.

3.16 PRODUCT – Any type of speaker covered by the Scope of these requirements.