ASA S1.45-2020-/IEEE Std 260.4-2018
(Revision of
IEEE Std 260.4-1996)

IEEE Standard Letter Symbols and Abbreviations for Quantities Used in Acoustics

(An Adoption of IEEE Std. 260.4-2018)

This Standard is identical to and is an adoption of IEEE 260.4-2018 **IEEE Standard Letter Symbols and Abbreviations for Quantities Used in Acoustics**, which was completed by the P260.4 Working Group with the following membership:

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IEEE Standard Letter Symbols and Abbreviations for Quantities Used in Acoustics

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IEEE Standard for Letter Symbols and Abbreviations for Quantities Used in Acoustics

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IEEE-SASB Coordinating Committee/SCC14—Quantities, Units, and Letter Symbols
of the
IEEE SASB/SCC14

Approved 27 September 2018

IEEE-SA Standards Board

Abstract: Tables of letter symbols and abbreviations for quantities in the science and technology of acoustics are contained in this standard. Recommendations for their use are also provided. Specialties within acoustics that make use of the letter symbols and abbreviations within this standard include, but are not limited to: speech, hearing, music, noise control, vibration, shock, sonar, and transducers. Although remarks and limited short-form information are provided for many of the symbols and abbreviations contained in this standard, definitions and methods of calculating the various quantities are outside the scope of this standard.

Keywords: abbreviations, acoustics, acoustical quantities, acoustical unit symbols, acoustical units, electroacoustics, IEEE 260.4™, scientific, scientific typography, scientific symbols, standard acoustical abbreviations, standard acoustical letter symbols

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Introduction

This introduction is not part of IEEE Std 260.4™-2018, IEEE Standard for Letter Symbols and Abbreviations for Quantities Used in Acoustics.

This standard is a revision of ANSI/IEEE 260.4™-1996. Major changes in this revision include the following:

— A systematic review of the previous version, including the addition of many new symbols and abbreviations in all categories, as well the deletion of obsolete items.

— Both the normative references and the bibliography have been revised and updated.

— The basic differences between letter symbols and abbreviations are clarified. The usage guidelines for letter symbols are also clarified and made consistent with international standards and current practice to the greatest extent possible.

— Script font is now preferred for mathematical operators and transforms, consistent with textbook usage.

— Since the usage of levels in acoustics is ubiquitous, special attention is given to remarks regarding levels in this revision. In particular, letter symbols for the levels of weighted quantities are detailed in an effort to reduce confusion and make usage more consistent across the various specialties within the field of acoustics.

— A number of deprecated abbreviations remain, and this is noted for each such occurrence.

— Table 1 through Table 10 are renumbered so that most significant digit of the item numbers within each table corresponds to the table number, making each table—and the items within them—easier to reference.

Acknowledgments

As Chair of the Working Group for the revision to IEEE Std 260.4™-1996, I am pleased to recognize the support of the Acoustical Society of America for its willingness to participate in the revision of this standard. Without the support of its Standards Director, Christopher J. Struck, who notified participants in the Acoustical Society of America to seek their involvement and the dedicated ASA members who volunteered to become members of the Working Group, the revision of this standard would not have been possible.

Contents

IEEE Standard for Letter Symbols and Abbreviations for Quantities Used in Acoustics

1. Overview

1.1 Scope

This standard provides a set of letter symbols for quantities and abbreviations and recommendations for their use in the science and technology of acoustics. The science and technology of acoustics includes sound, ultrasound, and infrasound in all media. Gases, especially air; liquids, especially water; and solids are examples of media with which acoustics is concerned. Specialties within acoustics that make use of the letter symbols and abbreviations within this standard include, but are not limited to: speech, hearing, music, noise control, vibration, shock, sonar, and transducers. Although remarks and limited short-form information are provided for many of the symbols and abbreviations contained herein, definitions and methods of calculating the various quantities are outside the scope of this standard.

1.2 Purpose

The purpose of this standard is to clarify the technical literature of acoustics by providing a standard set of letter symbols for use in mathematical formulations and a standard set of abbreviations for use in text, especially in tabulations and on graphs. This standard also encourages the treatment of levels according to the standard rules for all quantities and units and clarifies the basic differences among quantity symbols, unit symbols, and abbreviations.

2. Normative references

The following referenced documents are indispensable for the application of this standard (i.e., they must be understood and used, so each referenced document is cited in text and its relationship to this standard is explained). For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments or corrigenda) applies.

ASTM/IEEE Std SI10™, American National Standard for Metric Practice.[1]

IEEE Std 260.1™, IEEE Standard Letter Symbols for Units of Measurement (SI Units, Customary Inch-Pound Units, and Certain Other Units).[2, 3]

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