Australian Standard®

HEARING AIDS

Part 0—MEASUREMENT OF ELECTROACOUSTICAL CHARACTERISTICS

This Australian standard was prepared by Committee AK/11, Audiology. It was approved on behalf of the Council of the Standards Association of Australia on 25 November 1986 and published on 2 February 1987.

The following interests are represented on Committee AK/11:

Audiological Society of Australia

Better Hearing Australia

Department of Defence

Hearing Aid Council of Australia

National Acoustical Laboratories

Otolaryngological Society of Australia

State Pollution Control Commission of New South Wales

University of Melbourne

University of Queensland

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Part 0—MEASUREMENT OF ELECTROACOUSTICAL CHARACTERISTICS

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PREFACE

This standard was prepared by the Association's Committee on Audiology. It is identical with and has been reproduced from IEC Publication 118—0, Hearing Aids, Part 0: Measurement of Electroacoustical Characteristics. It supersedes (in part) AS 1088—1971, Methods of Measurement of the Electro-acoustic Characteristics of Air Conduction Hearing Aids.

The purpose of this standard is to specify methods which are practical and reproducible for the measurement and evaluation of the electroacoustical characteristics of air-conduction hearing aids.

For the purpose of this Australian standard, the text of the IEC standard used herein should be modified as follows:

Cross-references: The references to IEC standards should be replaced by references to Australian standards as follows:

Reference to IEC standard	*Appropriate Australian standard*
IEC 68, Basic Environment Testing Procedures	AS 1099, Basic Environmental Testing Procedures for Electrotechnology
IEC 118-1, Hearing Aids, Part 1: Hearing Aids with Induction Pick-up Coil Input	AS 1088.1, Hearing Aids, Part 1—Hearing Aids with Induction Pick-up Coil Input
IEC 118-2, Hearing Aids, Part 2: Hearing Aids with Automatic Gain Control Circuits	AS 1088.2, Hearing Aids, Part 2—Hearing Aids with Automatic Gain Control Circuits
IEC 118-7, Hearing Aids, Part 7: Measurement of Performance Characteristics of Hearing Aids for Quality Inspection for Delivery Purposes	AS 1088.7, Hearing Aids, Part 7—Measurement of Performance Characteristics of Hearing Aids for Quality Inspection for Delivery Purposes
IEC 118-8: Hearing Aids, Part 8: Methods of Measurement of Performance Characteristics of Hearing Aids Under Simulated in Situ Working Conditions	AS 1088.8, Hearing Aids, Part 8—Methods of Measurement of Performance Characteristics of Hearing Aids Under Simulated In Situ Working Conditions
IEC 126: IEC Reference Coupler for the Measurement of Hearing Aids using Earphones Coupled to the Ear By Means of Ear Inserts	AS 1089, Reference Coupler for the Measurement of the Electroacoustic Characteristics of Hearing Aid Earphones
IEC 225: Octave, Half-octave and Third-octave Band Filters Intended for the Analysis of Sound and Vibrations	AS Z41, Octave, Half-octave and One third Octave Band Pass Filters Intended for the Analysis of Sound and Vibrations
IEC 711, Occluded-ear Simulator for the Measurements of Earphones Coupled to the Ear by Ear Inserts	AS 2928, Occluded-ear Simulator for the Measurements of Earphones Coupled to the Ear by Ear Inserts

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for

HEARING AIDS

PART 0—MEASUREMENT OF ELECTROACOUSTICAL CHARACTERISTICS

1. Scope

This standard describes the measurement of physical performance characteristics of air-conduction hearing aids based on a free-field technique and measured with an ear simulator.

2. Object

2.1 The object of this standard is to describe methods of measurement for the evaluation of the electroacoustical characteristics of hearing aids.

The methods are chosen first of all to be practical and reproducible, and consequently they are based on fixed parameters chosen, to a certain extent, arbitrarily. This should be taken into consideration when comparisons are being made between test results for hearing aids of different models and manufacture, and in each case it is advisable to examine to what extent the arbitrarily chosen parameters will influence the comparison of such test results.

2.2 The test results obtained by the methods specified in this standard express the performance under the conditions of the test and may deviate substantially from the performance of the hearing aid under practical conditions of use.

2.3 It is not the purpose of this standard to restrict the variety of hearing aid performance and characteristics available, nor to inhibit in any way advances in the state of the art.

2.4 The most significant change in this standard is the use of an ear simulator in accordance with IEC Publication 711: Occluded-ear Simulator for the Measurement of Earphones Coupled to the Ear by Ear Inserts, rather than an acoustic coupler, IEC Publication 126: IEC Reference Coupler for the Measurement of Hearing Aids Using Earphones Coupled to the Ear by Means of Ear Inserts. The effect of this change will be to give an apparent significant increase, at some frequencies, of both gain and saturation output levels over the results obtained when measurements are made with the acoustic coupler. Results obtained by using the methods described in this standard cannot therefore be directly compared with those previously obtained using the first edition of IEC Publication 118: Recommended Methods for Measurement of the Electroacoustical Characteristics of Hearing Aids, or IEC Publication 118-7: Hearing Aids, Part 7: Measurement of Performance Characteristics of Hearing Aids for Quality Inspection for Delivery Purposes, or IEC Publication 118-8: Part 8: Methods of Measurement of Performance Characteristics of Hearing Aids under Simulated *in situ* Working Conditions. (In preparation.)

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