AS 3738—1990

IEC 908(1987)

Australian Standard®

Compact disc digital audio system

This Australian Standard was prepared by Committee TE/8, Audio and Video Engineering and Recording. It was approved on behalf of the Council of Standards Australia on 15 August 1989 and published on 16 February 1990.

The following interests are represented on Committee TE/8:

Australian Broadcasting Corporation

Australian Electrical and Electronic Manufacturers Association

Consumer Electronics Suppliers Association

Confederation of Australian Industry

Department of Transport and Communication

Federation of Australian Commercial Television Stations

Federation of Australian Radio Broadcasters

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National Acoustic Laboratories

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PREFACE

This Standard has been prepared by the Standards Australia Committee on Audio and Video Engineering and Recording. It is identical with and reproduced from the International Standard IEC 908: *Compact disc digital audio system*.

It represents a completely new direction in technology of the recording of sound and for that reason is completely separate from previous Standards on that subject which were published as Parts of AS 1127 on *Sound system equipment*. This new Standard defines parameters of compact discs which affect the interchangeability between discs and replay equipment. The Standard is also intended as a reference for manufacturers intending to produce discs or replay equipment to the system described.

The information carrier is a transparent disc, one side of which carries the required information. The encoded side is covered by a reflective protective layer. The information is stored in a spiral track from the read-out side, the spiral is read from the inside (the centre) to finish at the edge.

The pits and spaces between are of a size selected to take discrete values only, representing two-channel audio information which is read by means of a beam of light (laser) which passes through the transparent non-encoded side of the disc to the encoded side, where it is reflected and modulated by the recorded information.

The page numbers of the English text are given at the bottom left corner of each page of this Standard.

For the purposes of this Australian Standard, the IEC test should be modified as follows:

References: The references to other publications should be replaced by references to Australian Standards wherever necessary.

CONTENTS

Page

STANDARDS AUSTRALIA

Australian Standard
Compact disc digital audio system

1. **Scope**

This standard is applicable to a prerecorded optical reflective digital audio disc system.

2. **Object**

This standard defines those parameters of compact discs that affect interchangeability between discs and players. It is also intended as a reference for manufacturers wishing to produce discs and/or players that conform to the system described in this standard.

SECTION ONE — GENERAL

3. **Description of system**

The information carrier is a transparent disc, the substrate, one side of which carries the information. This side, the encoded side, is covered, in turn, by a reflective and a protective layer.

The information on the disc is stored in a spiral-shaped track consisting of successive shallow depressions (pits). When the disc is playing and viewed from the read-out side, the spiral starts near the centre of the disc and finishes near its edge.

The lengths of the pits and the spaces between them can take discrete values only, and represent the encoded two-channel audio information.

The information is read out by means of a beam of light which passes through the plain, i.e. the non-encoded side of the transparent disc to the encoded side, where it is reflected and modulated by the recorded information (see Figure 2*b*, detail B, page 39).

The information is followed by means of a servo-system for tracking and focusing.

4. **Requirements for measurements**

4.1 *Conditions of measurement*

Measurements and mechanical checks shall be carried out within the following limits unless otherwise specified:

— ambient temperature:	15°C to 35°C;
— relative humidity:	45% to 75%;
— air pressure:	86 kPa to 106 kPa.

4.2 *Requirements for the measuring pick-up*

The optical pick-up to be used for disc measurement shall comply with the following requirements:

— wavelength:	780 ± 10 nm;
— polarization:	circular;
— numerical aperture (NA):	0.45 ± 0.01;