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MICROFICHE READERS FOR INTERMITTENT USE

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STANDARDS ASSOCIATION OF AUSTRALIA
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National Library of Australia
Public Service Board of Western Australia
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AUSTRALIAN STANDARD

MICROFICHE READERS FOR INTERMITTENT USE

AS 2654—1984

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PREFACE

This standard was prepared by the Association's Committee on Micrographics Equipment and Techniques in response to a request by the former Department of Productivity. The request for the standard was based on a concern that there is a need for standardization of microform reading equipment in view of the rapid expansion of the use of microform as a storage medium. Since microfiche is the most widely used type of microform, priority has been given to the preparation of standards for microfiche readers.

For the purpose of standardization, the operational requirements for microfiche readers have been divided into three broad categories related to usage; prolonged use, intermittent use and portable use. Each category of usage establishes certain unique operational requirements which may not be applicable to or desirable within another category. While this standard sets out requirements and associated test methods for microfiche readers for intermittent use, the prolonged use category is covered by AS 2653, Microfiche Readers for Prolonged Use, and the portable use category is covered by AS 2655, Portable Microfiche Readers. This standard also covers the reading facilities of microfiche reader-printers, since these are normally subject to intermittent use.

Although microfiche reader performance is governed by the requirements set out in this standard, the total efficiency of a microfiche reader is affected by the environment and manner in which it is used and, in this regard, reference should be made to AS 2466, Guide to the Design of Microform Workstations.

Included in this standard are optical performance requirements and associated test methods which rely on the use of a test microfiche containing data relevant to resolution, legibility, distortion and magnification measurements. AS 2656, Australian Standard Test Microfiche, has been prepared for this purpose and is available for purchase from offices of this Association.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
MICROFICHE READERS FOR INTERMITTENT USE

FOREWORD

This standard sets out functional requirements for microfiche readers intended for intermittent use. The standard is confined to microfiche readers having magnifications of 24× and 48×, since these magnifications are becoming the most commonly used and are compatible with standard formats for microfiche set out in other Australian standards and in International standards.

Included in this standard is a method of measuring the screen luminance of a microfiche reader. The method is based on that set out in ANSI/NMA MS 12—1977, Methods for Measuring Screen Luminance, Contrast and Reflectance of Microform Readers, since the committee responsible for the preparation of the present standard considered that the ANSI/NMA document takes better account than the corresponding International standard of the head and body movements of an operator viewing the screen of a microfiche reader. For a rear projection reader, it is considered that the head of a seated operator is usually positioned at a distance of approximately 38 cm from the viewing screen and that the operator's line of sight is approximately perpendicular to the screen centre. For screens having a diagonal measurement not greater than about 38 cm, it is usual for the operator to view various areas about the screen centre by swivelling the head. However, for screens having a diagonal measurement greater than 38 cm, the operator may either move further away from the viewing screen or, alternatively, use body movement to adjust to viewing different areas of the screen. Such adjustment varies from one operator to another and is further affected by the arrangement of information on the viewing screen, screen luminance characteristics and various environmental factors.

Consequently, it is not possible to account for all likely situations within the confines of an accurate test method; however, the method of measuring screen luminance described in this standard does yield results which are representative of a valid approximation of average viewing conditions. Appendix A of this standard sets out a method of measuring the screen luminance of both front and rear projection readers, wherein a single 'eyepoint' is established as a point of measurement which simulates the majority of likely viewing situations.

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard specifies requirements for the design, construction and performance of microfiche readers having magnifications of 24× and 48× and intended for intermittent use, including the reading facilities of microfiche reader-printers. It does not include requirements for microfiche readers intended for prolonged use, portable microfiche readers or automated retrieval units (see Notes 1 and 2). The electrical safety requirements which must be complied with to secure approval for connection or sale of microfiche readers are also not included in this standard and are specified in AS 3181 (see Clause 2.3).

NOTES:

1. Requirements for microfiche readers for prolonged use are given in AS 2653.
2. Requirements for portable microfiche readers are given in AS 2655.
3. Throughout this standard the term 'reader' may be taken to mean 'microfiche reader'.

1.2 APPLICATION. This standard is applicable to readers that are intended for continuous use for periods of not greater than 1 h, and to the reading facilities of reader-printers. It is applicable only to readers incorporating either front or rear projection screens.

1.3 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

AS 1104 Informative Symbols for Use on Electrical and Electronic Equipment

AS 1259 Sound Level Meters
Part 2—Type 2, Precision

AS 1998 A6 Microfiche for Engineering and Other Data (excluding Computer Output Microfiche)

AS 2422 Glossary of Micrographics Terms

AS 2539 Micrographics—Alphanumeric Computer Output Microfilm (COM)—Microfiche A6

AS 2653 Microfiche Readers for Prolonged Use

AS 2655 Portable Microfiche Readers

AS 2656 Australian Standard Test Microfiche

AS 3100 Approval and Test Specification for Definitions and General Requirements for Electrical Materials and Equipment

AS 3181 Approval and Test Specification for Electrically Operated Projectors for Household and Similar Use

ANSI/NMA MS 12—1977 Method for Measuring the Screen Luminance, Contrast and Reflectance of Microfiche Readers

BS 4657 Method for Determining the Resolution Obtained in Micro Copying.

1.4 DEFINITIONS. For the purpose of this standard, the definitions in AS 2422 and the following definitions apply:

1.4.1 Effective screen size—the size of that portion of a reader screen which is effective in presenting a projected image. The term excludes any portion of the screen which may be masked by surrounding flanges, etc.

1.4.2 Eyepoint—an established point representative of the average point from which the screen of a microfiche reader is viewed.

1.4.3 Front projection reader—a microfiche reader which projects an image away from the operator onto an opaque screen to produce thereon a reflected image.

1.4.4 Image—a representation of an object, e.g. a document or drawing, projected by a lens system onto a reading surface.

1.4.5 Reader contrast—the ratio of the screen luminance of the light portion to that of the dark portion of the image of a test object displayed on a reader screen under specified conditions.

1.4.6 Rear projection reader—a microfiche reader which projects an image towards the operator onto a translucent screen to produce thereon a transmitted image.

1.4.7 Swivel point—a point in fixed relation to a reader screen and 75 mm below the eyepoint, which represents the location of an operator's cervical vertebrae (vertebrae of the neck area) and about which a luminance meter is swivelled when making measurements to simulate the operator's head movement about the cervical vertebrae.