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ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 452

ESSENTIAL CHARACTERISTICS OF 35 mm MICROFILM READING APPARATUS

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BRIEF HISTORY

The ISO Recommendation R 452, *Essential Characteristics of 35 mm Microfilm Reading Apparatus*, was drawn up by Technical Committee ISO/TC 46, *Documentation*, the Secretariat of which is held by the Nederlands Instituut voor Documentatie en Registratuur (N.I.D.E.R.) on behalf of the Stichting Nederlands Normalisatie-instituut (NNI).

Work on this question by the Technical Committee began in 1952 and led, in 1961, to the adoption of a Draft ISO Recommendation.

In October 1961, this Draft ISO Recommendation (No. 485) was circulated to all the ISO Member Bodies for enquiry. It was approved by the following Member Bodies:

Austria	Hungary	Portugal
Belgium	India	Romania
Brazil	Ireland	Spain
Canada	Israel	Sweden
Czechoslovakia	Italy	Switzerland
Denmark	Japan	Turkey
France	Netherlands	United Kingdom
Germany	New Zealand	U.S.A.
Greece	Poland	

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in November 1965, to accept it as an ISO RECOMMENDATION.

ISO Recommendation R 452 November 1965

ESSENTIAL CHARACTERISTICS OF 35 mm MICROFILM READING APPARATUS

1. SCOPE

1.1 This ISO Recommendation covers exclusively reading apparatus for 35 mm microfilms, perforated or unperforated, in roll or strip form, or in roll and strip form, complying with ISO Recommendation R ..., *35 mm and 16 mm Microfilms.**

1.2 It applies to reading apparatus for individual use installed in libraries, documentation centres and other institutions where ordinary microfilms, such as those covered by the aforementioned ISO Recommendation, are frequently received from outside sources.

1.3 The reading apparatus should equally accommodate double-perforated, single-perforated, and unperforated films.

2. GENERAL PRINCIPLES

2.1 The reading apparatus should be designed so that it can be used by all persons frequenting a library or a documentation centre, without supervision and after only brief instruction.

2.2 Under these conditions, the apparatus should provide legible images from 35 mm microfilms of usual type, without scratching the film or damaging the perforations during repeated or continuous use.

3. BASIC REQUIREMENTS

3.1 Reading apparatus is generally of one of the following types:

apparatus with a translucent screen,
apparatus for projection on an opaque screen.

3.2 Each type may be fitted

either with a screen not protected from the ambient light,
or with a screen protected from the ambient light by means of an appropriate device.

4. CIRCULAR FIELD

A 35 mm reading apparatus should have a circular field able to accommodate at least the image sizes 31.75 mm × 31.75 mm (1.250 in × 1.250 in) and 24 mm × 36 mm (0.945 in × 1.417 in) in either position.**

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* At present a draft proposal.

** The diagonal of a square with 31.75 mm (1.250 in) sides is substantially the same as that of a 24 mm × 36 mm (0.945 in × 1.417 in) rectangle. The square, the vertical and the horizontal rectangles are thus inscribed in the same circle with a diameter of 44.9 mm (1.736 in).

5. FILM REEL ACCOMMODATION

5.1 Any reading apparatus intended for 35 mm microfilm should accept microfilms of 30 m (100 ft) maximum length, wound on reels, in accordance with ISO Recommendation R ..., *35 mm and 16 mm Microfilms.**

5.2 The reading apparatus should be designed to allow suitable movement of the film during reading.

5.3 The reading apparatus should also accept 35 mm film strips ** of a length not exceeding 23 cm, complying with ISO Recommendation R ..., *35 mm and 16 mm Microfilms.** It is desirable that it should accept shorter strips, down to the agreed minimum of 11.5 cm (4.53 in).

6. ORIENTATION OF FILM IMAGES

When the images are arranged as specified under clause 3.1, "Specifications relating to images", of ISO Recommendation R ..., *35 mm and 16 mm Microfilms*,* the reading apparatus should permit the image to be properly oriented on the screen for direct reading.

7. SCREEN AND SCREEN LUMINANCE

7.1 It is desirable that the screen should be large enough to show, at least at the minimum scale, the entire frames mentioned under section 4.

7.2 The luminance of the screens of the reading apparatus is defined and measured according to the method described in ISO Recommendation R ..., *Measurement of the Screen Luminance of Microfilm Readers.**

8. MAGNIFICATION AND IMAGE QUALITY

8.1 35 mm microfilm reading apparatus with a fixed scale should give a minimum magnification of 12 × 1.***

8.1.1 Provision for an additional scale at least 40 per cent higher is recommended.

8.2 The reading apparatus should provide means for focusing the image on the screen.

8.3 The legibility of the image is determined and verified according to the method described in ISO Recommendation R ..., *Microcopies. Legibility Tests. Description and Use of the ISO Micromire (Micro Test Object) for Checking a Reading Apparatus.*****

8.4 Means should be provided for centring the source of light.

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* At present a draft proposal.
** For some purposes, the reading apparatus may be designed to accept only microfilm in strip form.
*** A magnification of 12.5 × 1 is, however, preferable.
**** At present Draft ISO Recommendation No. 648.