

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 782

MICROCOPY

MEASUREMENT OF THE SCREEN LUMINANCE OF MICROFILM READERS

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BRIEF HISTORY

The ISO Recommendation R 782, *Microcopy – Measurement of the screen luminance of microfilm readers*, was drawn up by Technical Committee ISO/TC 46, *Documentation*, the Secretariat of which is held by the Deutscher Normenausschuss (DNA).

Work on this question by the Technical Committee began in 1954 and led, in 1967, to the adoption of a Draft ISO Recommendation.

In March 1967, this Draft ISO Recommendation (No. 1056) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Belgium	Hungary	Portugal
Brazil	India	Romania
Canada	Ireland	Sweden
Chile	Israel	Switzerland
Czechoslovakia	Italy	Spain
Denmark	Japan	U.A.R.
France	Netherlands	United Kingdom
Germany	Norway	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 July 1968, to accept it as an ISO RECOMMENDATION.

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INTRODUCTION

The screen luminance of a microfilm reader is an essential factor of eye comfort. However, while certain essential requirements of the human eye as regards luminance can be defined physiologically, it is more difficult to characterize a microcopy reader screen simply by one or more luminance values corresponding to these physiological requirements.

The experts hesitated in particular between two very different methods of measurement of screen luminance. A first method could consist in taking luminance measurements perpendicularly to the screen and over its entire surface; a second method could consist in fixing the measuring instrument opposite the centre of the screen and taking the luminance measurements by swivelling the instrument.

In practice, and especially with translucent screens, the results obtained with each of these two methods are fundamentally different. Moreover, the first one is not always practicable, owing to the geometrical layout of the apparatus.

To approximate as closely as possible to the actual conditions of use of the readers, it seemed necessary to combine the two methods by splitting the surface of the screen into separate areas and examining each area according to precisely stated rules.

The width of 21 cm given to these areas was not fixed at random. Physiologically it represents, margins included, the expanse which can normally be scanned by the eye of an observer glancing at a written text.*

The distance of 33 cm between screen and measuring instrument corresponds to the normal reading distance for a text of the width specified above.

Finally, it was not deemed essential to reproduce the exact conditions of binocular reading because the method adopted covers slanting measurements. While involving a far smaller complication, this feature permits indirectly analysing the differences in luminous perception which may be experienced by the two eyes when observing a single point from different angles.

The proposed method of measurement cannot alone solve the problem of adapting the luminance of microcopy reader screens to the physiological requirements of the human eye. At a later stage, minimal luminance values will have to be determined, as well as the maximal values of the luminance logarithmic differences (see clause 4.2.1) on one and the same screen.

The results obtained with both opaque and translucent screens are comparable within each category but differ more from one category to the other.

However, the method will allow comparison of the performance of various readers available on the market and should lead to improved equipment.

* See ISO Recommendation R 216, *Trimmed sizes of writing paper and certain classes of printed matter*, standardizing a width of 210 mm for writing paper and some types of printed matter.