
International Standard



4911

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Textiles — Cotton fibres — Equipment and artificial lighting for cotton classing rooms

Textiles — Fibres de coton — Équipement et éclairage artificiel des salles de classement du coton

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 4911 was developed by Technical Committee ISO/TC 38, *Textiles*, and was circulated to the member bodies in September 1979.

It has been approved by the member bodies of the following countries :

Australia	Ghana	Portugal
Belgium	Hungary	Romania
Bulgaria	India	South Africa, Rep. of
Canada	Indonesia	Spain
China	Israel	Sweden
Cyprus	Japan	Switzerland
Czechoslovakia	Korea, Rep. of	Turkey
Egypt, Arab Rep. of	Libyan Arab Jamahiriya	USA
Finland	New Zealand	USSR
France	Norway	Venezuela
Germany, F. R.	Poland	Yugoslavia

No member body expressed disapproval of the document.

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0 Introduction

Colour and appearance are criteria of quality establishing the price and use of cotton. Therefore, the colour quality of the light by which cotton is classed is important. Until 1940, practically all cotton classing was carried out in daylight, usually in rooms equipped with special skylights designed to provide sufficient and uniform lighting on the classing tables.

Cotton is classed by an operator¹⁾ on the bases of the colour that the sample and a standard would have in daylight. In classing rapidly, the operator refers to physical standards only occasionally each day. Therefore it is important that artificial lighting in a classing room not only provides a constant colour, but that it makes the cotton appear as nearly as possible as it would in daylight, so that the classer can take full advantage of training and memory.

Daylight with a colour temperature of about 7 500 K has been found, in practise, by many cotton classers [1, 2, 3]²⁾, and colour matchers in other industries [4, 5, 6], to be the minimum colour temperature of preferred daylight. In northern latitudes, this is the colour of a moderately overcast northern sky.

One of the most important reasons for using artificial lighting rather than daylight is that both the colour and amount of artificial light can be maintained more uniform than can daylight, and differences caused by geographical location and sky conditions are overcome. Additionally, standardized lighting conditions eliminate the need for cotton classers to make visual and mental adjustments for wide differences in amount and quality of light when they move from one location to another.

1 Scope and field of application

This International Standard specifies requirements for artificial illumination used for judging accurately and uniformly the colour of cotton. It also describes a method of test for appraising the colour quality of lamps procured for this purpose.

It includes requirements for colours to be used on walls and other surfaces in cotton classing rooms, and for maintaining the required level of performance of the lighting system.

2 Definitions

2.1 spectral quality (of a light source): The characteristics of a source determined by its spectral composition (radiant energy flux per unit wavelength interval throughout the spectrum).

2.2 colour temperature (of a light source): The absolute temperature of a black body whose chromaticity is the same (or nearly so) as that of the light source.

2.3 index of colour rendering (of a light source): The degree to which the perceived colours of objects illuminated by a given source conform to those of the same objects illuminated by a standard source for specified viewing conditions³⁾.

1) Henceforth referred to as the "classer".

2) These figures refer to the bibliographic references which are to be found after the annexes.

3) Established by the general index for interpretation of colour, recommended in 1965 by the International Commission on Illumination [9, 10].