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**Plastics—Determination of the
total luminous transmittance of
transparent materials—
Part 1 : Single beam instrument**

ICS 83.080.01

Descriptors : plastics, transparency permeability measurement

Reference number : JIS K 7361-1 : 1997 (E)

K 7361-1 : 1997 (ISO 13468-1 : 1996)

Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law:

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In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

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Plastics—Determination of the total luminous transmittance of transparent materials— Part 1 : Single beam instrument

Introduction This Japanese Industrial Standard has been prepared on the basis of ISO 13468-1, *Plastics—Determination of the total luminous transmittance of transparent materials—Part 1 : Single beam instrument* published in 1996 as the first edition, without modifying its technical content and structure.

The parts underlined with dots are items not included in the original International Standard.

1 Scope This Standard covers the determination of the total luminous transmittance, in the visible region of the spectrum, of planar transparent and substantially colourless plastics, using a single-beam photometer with a specified CIE standard light source and photodetector.

This Standard cannot be used for plastics which contain fluorescent materials.

This Standard is basically applicable to transparent moulding materials, films and sheets not exceeding 10 mm in thickness.

- Informative references**
- 1 Total luminous transmittance can also be determined by a double-beam spectrophotometer as in part 2 of the Standard. Part 1, however, provides a simple but precise, practical and quick determination. This method is suitable for use not only for analytical purposes but also for quality control.
 - 2 Substantially colourless plastics include those which are faintly tinted.
 - 3 Specimens more than 10 mm thick may be measured provided the instrument can accommodate them, but the results may not be comparable with those obtained using specimens less than 10 mm thick.

2 Normative references The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

ISO 291 : 1977 *Plastics—Standard atmospheres for conditioning and testing*

ISO 5725-1 : 1994 *Accuracy (trueness and precision) of measurement methods and results—Part 1 : General principles and definitions*

ISO 5725-2 : 1994 *Accuracy (trueness and precision) of measurement methods and results—Part 2 : Basic method for the determination of repeatability and reproducibility of a standard measurement method*

ISO 5725-3 : 1994 *Accuracy (trueness and precision) of measurement methods and results—Part 3 : Intermediate measures of the precision of a standard measurement method*

ISO 7724-2 : 1984 *Paints and varnishes—Colorimetry—Part 2 : Colour measurement*

ISO/CIE 10526 : 1991 *CIE standard colorimetric illuminants*

ISO/CIE 10527 : 1991 *CIE standard colorimetric observers*

IEC 50(845) : 1987 *International electrotechnical vocabulary—Chapter 845 : Lighting*

3 Definitions For the purposes of this Standard, the definitions given in IEC 50(845) apply, together with the following:

3.1 transparent plastics Plastics in which the transmission of light is essentially regular and which have a high transmittance in the visible region of the spectrum.

Informative reference 4 Provided their geometrical shape is suitable, objects will be seen distinctly through plastic which is transparent in the visible region.

3.2 total luminous transmittance The ratio of the transmitted luminous flux to the incident luminous flux when a parallel beam of light passes through a specimen.

4 Apparatus

4.1 The apparatus shall consist of a stabilized light source, an associated optical system, an integrating sphere fitted with ports, and a photometer. Ingress of external light into the integrating sphere shall be prevented. A schematic arrangement of the apparatus is shown in Fig. 1.

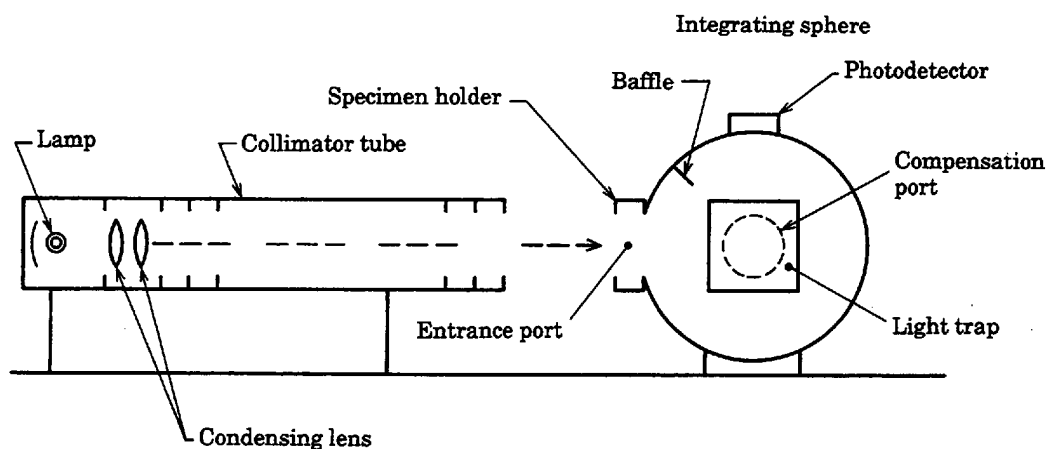


Fig. 1 Schematic arrangement of the apparatus