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JIS B 7184 : 1999

Profile projectors

ICS 17.040.01

Descriptors : projectors (image), visual inspection (testing), still-picture projectors,
length measurement, angular measurement, profile measurement

Reference number : JIS B 7184 : 1999 (E)

Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of International Trade and Industry through deliberations at the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. Consequently **JIS B 7184 : 1972** is replaced with **JIS B 7184 : 1999**.

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4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

In the event of any doubts arising as to the contents,
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Profile projectors

Introduction This Standard is the original Japanese Industrial Standard and does not correspond to any International Standard.

1 Scope This Standard specifies profile projectors that measure length, angle, profile and so forth. The profile projector consists of the project lens, the screen, the lighting equipment, the stage or the precise cross-moving table, and the main body that supports these (see Attached Table 1, Attached Table 2 and Attached Table 3).

2 Normative references The following standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent editions of the standards indicated below shall be applied.

JIS B 7181 *Resolving power test charts for projection lens*

JIS B 7526 *Squares*

JIS B 7536 *Electrical comparators*

JIS B 7541 *Standard scales*

JIS R 6001 *Bonded abrasive grain sizes*

3 Definitions For the purposes of this Standard, the following definitions of main terms shall apply.

- a) **X axis** The axis of the precise cross-moving table that moves in the lateral direction on the projection surface.
- b) **Y axis** The axis of the precise cross-moving table that moves in the direction perpendicular to Y axis on the projection surface.
- c) **measuring accuracy** Accuracy obtained when a profile projector measures measurement standard under the actual measurement condition.

4 Performances The performances shall be as shown in Table 1 provided that tolerance shall be at 20 °C.

5 Marking On the main body of the profile projector, manufacturer's name or abbreviation and manufacturing number shall be marked, and on the projection lens, the nominal magnification.

Table 1 Performances

No.	Item	Measuring method	Explanatory drawing	Measuring tool	Tolerance
1	Squareness between the X axis direction of movement and the Y axis direction of movement, of the table	Place the using surface of the square on the top surface of the table parallel with the X axis direction of movement, and then obtain the maximum value of the indicated run-out when making the table move in the Y axis direction, applying the electric comparator or the like which is fixed at the place where the projection lens is mounted, to the other using surface of the square.	Attached Fig. 4	Squares (type I, grade 1 in accordance with JIS B 7526) or tools having equivalent performance. Electric comparators (in accordance with JIS B 7536) or tools having equivalent performance.	($4.5 + 0.06 L$) μm max. where, L : Travel amount (mm) of the table, to apply over the entire measuring range.
2	Magnification accuracy when using transmission lighting of projection lens	Place the standard scale on the top surface of the table, and measure the projected image by using the standard scale for reading with the centre of the screen* being taken as the original point. Express the error of magnification between the magnification measured and the nominal magnification in percentage.		Standard scales (grade 01 in accordance with JIS B 7541 or standard scales calibrated with accuracy of 1 μm) or tools having equivalent performance. Standard scales for reading (grade 3 in accordance with JIS B 7541) or tools having equivalent performance.	± 0.15 % of nominal magnification

Note * In the case where the projection surface is a transparent screen, a suitable transmission diffusing screen shall be placed.