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Ball lamps

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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 C 7530 : 1987** is replaced with **JIS C 7530 : 1999**.

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Contents

	Page
Introduction	1
Section 1 General	
1.1 Scope	1
1.2 Normative references	1
1.3 Definitions	2
1.4 Classification	2
Section 2 Lamp data sheet	
2.1 Numbering method of lamp data sheets	3
2.2 Type designation of lamps and lamp data sheet number	3
Section 3 Performances, dimensions and safety	
3.1 Performances	4
3.2 Dimensions	5
3.3 Safety	5
Section 4 Acceptance or rejection criteria	
4.1 Tests	5
4.2 Inspections	5
Section 5 Designation and marking of products	
5.1 Designation of products	6
5.2 Marking	6
Annex 1 (normative) Test methods	18
Annex 2 (normative) Luminance ratio test	19
Annex 3 (normative) Maximum outline dimensions of lamps	21

Ball lamps

Introduction This Japanese Industrial Standard has been prepared employing IEC 60064 *Tungsten filament lamps for domestic and similar general lighting purposes* published in 1993 as the third edition, as the reference document.

Section 1 General

1.1 Scope This Standard specifies ball lamps which comply with the safety requirements for incandescent lamps for general lighting specified in JIS C 7551-1 : 1999 **Section 2** *Safety requirements* and which satisfy the following conditions:

- rated wattage: 25 W or more up to and including 100 W
- rated voltage: 100 V
- glass bulb shape: Type G

Remarks : The shape and name of glass bulb are based on JIS C 7710.

- Treatment of glass bulb: colourless clear, white coated and white thin filmed
- Cap: E17/20 and E26/25

Remarks : The shapes and dimensions of caps are based on JIS C 7709-1.

1.2 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, if the year of issue is not stated.

JIS B 7507 *Vernier, dial and digital callipers*

JIS C 1609 *Illuminance meters*

JIS C 7551-1 *Safety specifications for incandescent lamps—Part 1 : Tungsten filament lamps for domestic and similar general lighting purposes*

Remarks : IEC 60432-1 : 1993 *Safety specifications for incandescent lamps—Part 1 Tungsten filament lamps for domestic and similar general lighting purposes* is equivalent to the above JIS.

JIS C 7709-1 *Lamp caps and holders together with gauges for the control of interchangeability and safety—Part 1 : Lamp caps*

Remarks : IEC 60061-1 : 1996 *Lamp caps and holders together with gauges for the control of interchangeability and safety—Part 1 : Caps* is equivalent to the above JIS.

JIS C 7709-3 *Lamp caps and holders together with gauges for the control of interchangeability and safety—Part 3 : Gauges*

Remarks : IEC 60061-3 : 1996 *Lamp caps and holders together with gauges for the control of interchangeability and safety—Part 3 : Gauges* is equivalent to the above JIS.

JIS C 7710 *Designation method for glass bulbs of lamps*

Remarks : **IEC 60887** : 1988 *Glass bulb designation system for lamps* is equivalent to the above **JIS**.

JIS C 7801 *General rules of testing method for lamps*

JIS C 8302 *Edison screw lamp holders*

JIS Z 8113 *Lighting vocabulary*

IEC 60064 : 1993 *Tungsten filament lamps for domestic and similar general lighting purposes—Performance requirements*

IEC 61126 : 1992 *Procedure for use in the preparation of maximum lamp outlines*

Information : The **IEC** Standard number is based on the new numbering system of **IEC** Standards put in force on January 1st 1997, and the Standard published before the said date is numbered by adding 60000 to the former number. This is only the change in the numbering system and the contents remain unchanged.

1.3 Definitions For the purposes of this Standard, in addition to the definitions stated in **JIS Z 8113**, the following principal definitions apply:

- a) **rated voltage** The voltage marked on a lamp.
- b) **rated wattage** The wattage marked on a lamp.
- c) **initial luminous flux** The total luminous flux emitted from a lamp after aging when the lamp is operated at the rated voltage.
- d) **rated initial luminous flux** The initial luminous flux of a lamp based on which the service of the lamp is specified.
- e) **lumen maintenance** The percent ratio of the total luminous flux after operation for a prescribed time to the initial luminous flux.
- f) **life** The operating hours of a lamp until the filament burns out.
- g) **rated life** The hours announced officially based on the mean value of life for lamps of the same type manufactured extending over a long period of time.
- h) **luminance ratio** The ratio of the luminance at a specified position to the maximum luminance.

1.4 Classification Lamps are classified and expressed by the type designation as given in **2.2**.

The type designation shall be formed in the following order:

Item 1	Item 2	Item 3	Item 4	Item 5	Item 6
Symbol denoting ball lamp	Symbol denoting inner treatment of glass bulb	Symbol denoting rated voltage	Symbol denoting rated wattage	Symbol denoting diameter of glass bulb	Symbol denoting cap
G	W: white or white thin film coated C: colourless clear	100 V	25 W 38 W 40 W 57 W 60 W 95 W 100 W	50 70 80 95	No marking: lamps using E26/25 cap E17: lamps using E17/20 cap

Remarks : At the end of the type designation, symbol denoting further classification or numerals may be added.

Section 2 Lamp data sheet

2.1 Numbering method of lamp data sheets The numbering method of lamp data sheets shall be as given in Table 1.

Table 1 Numbering method

Classification	Data sheet number
Lamps with E26/25 or E17/20 cap and glass bulb of 50 mm diameter	2600J to 2699J
Lamps with E26/25 cap and glass bulb of 70 mm diameter	2700J to 2749J
Lamps with E26/25 cap and glass bulb of 80 mm diameter	2750J to 2799J
Lamps with E26/25 cap and glass bulb of 90 mm diameter	2800J to 2899J

2.2 Type designation of lamps and lamp data sheet number The type designation of lamp and the lamp data sheet number in which the said type designation of lamps is specified are given in Table 2.

Table 2 Type designation and data sheet number

Type designation	Data sheet number
GW100V25W50 GC100V25W50	C 7530-JIS-2600J-1
GW100V25W50E17 GC100V25W50E17	C 7530-JIS-2610J-1
GW100V40W50E17 GC100V40W50E17	C 7530-JIS-2620J-1
GW100V40W70 GC100V40W70	C 7530-JIS-2700J-1
GW100V60W70 GC100V60W70	C 7530-JIS-2710J-1
GW100V40W80 GC100V40W80	C 7530-JIS-2750J-1
GW100V60W80 GC100V60W80	C 7530-JIS-2760J-1
GW100V38W95 GW100V40W95 GC100V40W95	C 7530-JIS-2800J-1
GW100V57W95 GW100V60W95 GC100V60W95	C 7530-JIS-2810J-1
GW100V95W95 GW100V100W95 GC100V100W95	C 7530-JIS-2820J-1

Section 3 Performances, dimensions and safety

3.1 Performances The performances shall be as follows:

- Luminance ratio** When the test specified in Annex 2 (normative) is carried out on white coated or white thin film coated lamps, the luminance ratio shall not exceed 5.
- Initial characteristics** When the tests are carried out in accordance with Annex 1 (normative) the initial characteristics shall be such that the initial luminous flux is not less than 90 % of the rated initial luminous flux specified in the data sheet for white coated or white thin film coated lamps, and not less than 93 % of the rated initial luminous flux specified in the data sheet for colourless clear lamps. The wattage shall not exceed 104 % of the rated wattage specified in the data sheet plus 0.5 W.

- c) **Life** When the test is carried out in accordance with Annex 1 (normative) the life shall be such that the individual value is not less than 70 %, and the mean value is not less than 96 % of the rated life specified in the detail specification.
- d) **Lumen maintenance** The total luminous flux is measured when 75 % of the rated life is elapsed and the ratio of the measured value to the initial luminous flux is obtained. The lumen maintenance so obtained shall be not less than the value specified in the data sheet.

3.2 Dimensions The dimensions shall be as specified in Attached figure and the data sheets.

3.3 Safety The safety shall be as specified in **JIS C 7551-1 : 1999 Section 2 Safety requirements**. However, the test in **2.3** of the above **JIS** may be carried out by using either of the gauge specified in **IEC 60061-3** or the socket specified in **JIS C 8302**.

Section 4 Acceptance or rejection criteria

4.1 Tests The test conditions and test methods shall be as stated in Annex 1 (normative) and Annex 2 (normative).

4.2 Inspections

4.2.1 Type inspection The type inspection is carried out on the same specimen in accordance with the method specified in **4.1** for the following items:

- a) Dimensions
- b) Luminance
- c) Initial characteristics
- d) Life
- e) Lumen maintenance

4.2.2 Lot inspection

- a) **Inspection item** The lot inspection shall be carried out in accordance with the methods specified in **4.1**, for the following items:
 - 1) Dimensions
 - 2) Initial characteristics
 - 3) Life
 - 4) Lumen maintenance
- b) **Sampling inspection** The sampling inspection shall be carried out in accordance with either of the following two methods:
 - 1) **Sampling inspection A** The sample size, acceptance number and quality criterion shall be as given in Table 3.

Table 3 Sample size and acceptance number

Inspection item	Sample size (n)	Acceptance number (c)	Quality criterion
Dimensions	5	0	As specified in 3.2.
Wattage	15	1	As specified in 3.1 b).
Initial luminous flux	15	1	As specified in 3.1 b).
Life (mean value)	12	—	As specified in 3.1 c).
Life (individual value)		1	As specified in 3.1 c).
Lumen maintenance		1	As specified in 3.1 d).

- 2) **Sampling inspection B** The sample size, acceptance number and quality criterion shall be as given in Table 4.

Table 4 Sample size and acceptance number

Inspection item	Sample size (n)	Acceptance number (c)	Quality criterion
Dimensions	50	4	As specified in 3.2.
Wattage	100	12	As specified in 3.1 b).
Initial luminous flux	100	12	As specified in 3.1 b).
Life (mean value)	50	—	As specified in 3.1 c).
Life (individual value)		8	As specified in 3.1 c).
Lumen maintenance			As specified in 3.1 d).

Section 5 Designation and marking of products

5.1 Designation of products A product shall be designated by its name and type designation.

Example : Ball lamp GW100V60W95

5.2 Marking

5.2.1 Marking on product The following items shall be legibly marked on the glass bulb or cap of each lamp:

- Type designation (information other than rated voltage and rated wattage may be omitted)
- Manufacturer's name or abbreviation