

DEPARTMENT OF COMMERCE
BUREAU OF STANDARDS
George K. Burgess, Director

1928 SUPPLEMENT
TO
CIRCULAR OF THE BUREAU OF STANDARDS, No. 13

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1928 SUPPLEMENT TO UNITED STATES GOVERNMENT MASTER SPECIFICATION FOR LAMPS, ELECTRIC, INCANDESCENT, LARGE, TUNGSTEN FILAMENT

FEDERAL SPECIFICATIONS BOARD SPECIFICATION No. 23b

[Revision Promulgated November 23, 1927. Supersedes F. S. B. No. 23]

This specification was officially promulgated by the Federal Specifications Board on February 15, 1923, for the use of the departments and independent establishments of the Government in the purchase of large tungsten filament incandescent electric lamps.

[The technical requirements of this revision of this specification shall become mandatory for all departments and independent establishments of the Government not later than February 23, 1928. They may be put into effect, however, at any earlier date after promulgation.]

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Section III.—TABLES OF INITIAL RATING TOLERANCES¹

TABLE 4.—Large tungsten filament lamps for general lighting service on 110, 115, and 120 volt multiple circuits

Lamp		Initial rating tolerances at rated voltage	
Watts	Bulb	Lumens per watt above or below standard	Total watts above or below standard
		<i>Per cent</i>	<i>Per cent</i>
10.....	S-14.....	12	12
15.....	A-17.....	11	10
25.....	A-19.....	9	8
40.....	A-21.....	9	8
50.....	A-21.....	11	8
50.....	P-19.....	10	8
60.....	A-21.....	11	8
100.....	A-23.....	11	8
150.....	PS-25.....	12	12
200.....	PS-30.....	12	12
300.....	PS-35.....	12	12
500.....	PS-40.....	12	12
750.....	PS-52.....	12	12
1,000.....	PS-52.....	12	12

TABLE 5.—Large tungsten, filament lamps for use on 220, 230, 240, and 250 volt multiple circuits

Lamp		Initial rating tolerances at rated voltage	
Watts	Bulb	Lumens per watt above or below standard	Total watts above or below standard
		<i>Per cent</i>	<i>Per cent</i>
25.....	A-19.....	10	10
50.....	A-21.....	10	10
100.....	A-23.....	15	12

¹ Sections III and IV of the United States Government master specification for large tungsten lamps are printed separately in order that the schedules contained herein may readily be revised. When the United States Government specification for large lamps is used by purchasers of electric lamps in making contracts and as part of such contracts, it is advisable to incorporate the manufacturers' latest schedules.

TABLE 6.—Large tungsten, filament lamps for constant-current street-lighting circuits

Lamp			Initial rating tolerances at rated amperes	
Amperes	Lumens	Bulb	Lumens above or below standard	Total watts above or below standard
			Per cent	Per cent
6.6.....	600	S-24½	15	13
6.6.....	800	S-24½	14	12
6.6.....	1,000	S-24½	14	11
6.6.....	2,500	PS-35	14	10
6.6.....	4,000	PS-35	14	10
6.6.....	6,000	PS-40	14	10
15.0.....	4,000	PS-40	16	12
20.0.....	6,000	PS-40	16	12
20.0.....	10,000	PS-40	16	12

Section IV.—MANUFACTURERS' SCHEDULES OF COMMERCIAL RATINGS OF LARGE TUNGSTEN FILAMENT LAMPS

SCHEDULE 1.—Large tungsten filament lamps for 110, 115, and 120 volt multiple lighting service

Watts	Rated initial lumens	Mean lumens per cent of average initial lumens	Rated initial lumens per watt	Mean lumens per watt per cent of initial	Hours life	Bulb	Screw base	Maximum over-all length	Light center length	Position of burning
								Inches	Inches	
10.....	72	92	7.2	93	1,500	S-14	Medium	3½	2½	Any.
15.....	126	90	8.4	93	1,000	A-17	do	3½	2½	Do.
25.....	285	87	9.4	91	1,000	A-19	do	3½	2½	Do.
40.....	396	84	9.9	88	1,000	A-21	do	4½	2½	Do.
50.....	515	93	10.3	94	1,000	A-21	do	4½	3½	Do.
50.....	490		9.8		1,000	P-19	do	3½	2½	Do.
60.....	666	93	11.1	94	1,000	A-21	do	5¼	3½	Do.
100.....	1,320	91	13.2	92	1,000	A-23	do	6¼	4½	Do.
150.....	2,310	90	15.4	91	1,000	PS-25	do	6¼	5¼	Do.
200.....	3,240	90	16.2	91	1,000	PS-30	do	8½	6	Do.
300.....	5,280	90	17.6	91	1,000	PS-35	Mogul	9½	7	Do.
500.....	9,500	88	19.0	89	1,000	PS-40	do	9½	7	Do.
750.....	14,775	84	19.7	85	1,000	PS-52	do	13½	9½	Do.
1,000.....	21,000	81	21.0	82	1,000	PS-52	do	13½	9½	Do.

SCHEDULE 2.—Large tungsten filament lamps for 220, 230, 240, and 250 volt multiple service

Watts	Rated initial lumens	Mean lumens per cent of average initial lumens	Rated initial lumens per watt	Mean lumens per watt per cent of initial	Hours life	Bulb	Screw base	Maximum over-all length	Light center length	Position of burning
								Inches	Inches	
25.....	202	89	8.1	91	1,000	A-19	Medium	3½	2½	Any.
60.....	460	85	9.2	88	1,000	A-21	do	4½	2½	Do.
100.....	1,040	93	10.4	94	1,000	A-23	do	6¼	4½	Do.

SCHEDULE 3.—Large tungsten filament lamps for constant-current street lighting circuits

6.6 AMPERES

Rated initial lumens	Mean lumens per cent of average initial lumens	Rated initial lumens per watt	Mean lumens per watt per cent of initial	Hours life	Average volts	Average watts	Bulb	Screw base	Maximum over-all length	Light center length	Position of burning
600-----	100	13.8	100	1,350	6.6	43.5	S-24 $\frac{1}{2}$	Mogul-----	<i>Inches</i> 7 $\frac{1}{4}$	5 $\frac{3}{4}$	Any.
800-----	100	14.8	100	1,350	8.2	54.0	S-24 $\frac{1}{2}$...do-----	7 $\frac{1}{2}$	5 $\frac{3}{4}$	Do.
1,000-----	100	15.5	100	1,350	9.8	64.5	S-24 $\frac{1}{2}$...do-----	7 $\frac{1}{8}$	5 $\frac{3}{4}$	Do.
2,500-----	100	16.2	100	1,350	23.4	154.3	PS-35	...do-----	9 $\frac{7}{16}$	7	Do.
4,000-----	100	17.3	100	1,350	35.0	231.2	PS-35	...do-----	9 $\frac{7}{16}$	7	Do.
6,000-----	100	17.8	100	1,350	51.1	337.0	PS-40	...do-----	9 $\frac{13}{16}$	7	Do.

15 AMPERES

4,000----	100	17.7	100	1,350	15.1	226.0	PS-40	Mogul-----	12 $\frac{3}{8}$	19 $\frac{1}{2}$	Base up.
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20 AMPERES

6,000----	96	18.7	95	1,350	16.0	320.7	PS-40	Mogul-----	12 $\frac{3}{8}$	19 $\frac{1}{2}$	Base up.
10,000----	92	19.0	92	1,350	26.3	526.0	PS-40	...do-----	12 $\frac{3}{8}$	19 $\frac{1}{2}$	Do.

¹ This lamp, if made for base-down burning, has a light center length of 8 $\frac{1}{4}$ inches.

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