

DEPARTMENT OF COMMERCE
BUREAU OF STANDARDS
WASHINGTON

Letter
Circular
LC 203

July 1, 1926

FEES FOR PHOTOMETRIC TESTING

The schedules of fees given in this letter circular supersede those in the 7th edition of Bureau of Standards Circular No. 6, issued December 30, 1916.

Incandescent Electric Lamps as Photometric Standards

A normal incandescent lamp when operated at constant voltage usually increases slightly in candlepower for a short time, the length of which depends upon the temperature of the filament. A stationary period is then reached, after which there is a progressive drop in the candlepower. The initial rise in candlepower is due to a gradual decrease in the resistance of the filament, while the subsequent decrease in candlepower is due chiefly to blackening, caused by a deposit on the inside of the bulb. Therefore, in order that a lamp may be useful as a photometric standard, it should be seasoned by a preliminary burning sufficient to bring its resistance to a steady state. In order that it may not be affected subsequently by any slight overvoltage, the lamp should be seasoned at a voltage somewhat higher than that at which it is to be used as a standard.

The Bureau is prepared to standardize incandescent filament lamps which have been properly seasoned, or to season and standardize lamps when necessary, or to furnish lamps that have been seasoned and standardized at the Bureau, the respective fees being as given in the following schedules.

When lamps are submitted for standardization it is desirable that they be accompanied by a statement as to whether they have been seasoned or not. If they have been seasoned, the voltage at which they were burned and the number of hours should be given if known. It should be stated also whether they are to be standardized rotating or stationary and whether at a given luminous flux (lumens), candlepower, voltage, current, or efficiency. In the certificates which are issued with standard lamps the voltage and the corresponding current and flux or candlepower are given.

Schedule 151. - Standardization of Incandescent Electric Lamps.

(For fees for lamps that require seasoning, see
Schedule 152 below).

This schedule applies to lamps that have been properly seasoned when received for standardization, and to lamps to be restandardized. (Note that gas-filled lamps can not be standardized in horizontal candlepower unless the filament is arranged in grid or loop form in one vertical plane for stationary burning).

(a) Horizontal candlepower, either stationary or rotating.

1. One lamp, at one voltage or current.....\$6.00
2. Two or more lamps of same size and type, each... 4.00
3. Standardization at more than one voltage or current, each additional voltage or current..... 2.00

(b) Spherical candlepower, or total flux (lumens).

1. One lamp, at one voltage or current..... 7.00
2. Two or more lamps of same size and type,
at one voltage or current 5.00
3. Standardization at more than one voltage or current, each additional voltage or current 2.00

Schedule 152. Seasoning and Standardization of Incandescent
Electric Lamps

(a) Horizontal candlepower, either rotating or stationary.

1. One lamp, at one voltage or current.....\$8.00
2. Two or more lamps, same size and type, each..... 6.00
3. Standardization at more than one voltage or current, each additional voltage or current..... 2.00

(b) Spherical candlepower or total flux (lumens).

1. One lamp at one voltage or current 10.00
2. Two or more lamps of same size and type 8.00
3. Standardization at more than one voltage or current, each additional voltage or current.... 2.00

Schedule 153. - Supplying Standardized Incandescent Electric Lamps

The Bureau endeavors to keep on hand small stocks of seasoned and standardized lamps of the more common voltages and sizes ordinarily used as standards. Lamps of unusual sizes or voltages, which have to be seasoned and standardized to order, or stock lamps which have to be standardized to meet requirements of an order, are furnished at prices given in Schedules 151 and 152.

- (a) Standards of horizontal candlepower, vacuum tungsten lamps, 25, 40, and 50-watt sizes, either stationary or rotating, at one voltage or current, each \$5.00
- (b) Standards of spherical candlepower (or total lumens) 25, 40, and 50-watt vacuum tungsten lamps, and 75, 100, and 200-watt gas-filled lamps, at one voltage or current, each 7.00

Schedule 154. - Miscellaneous Photometric Tests

The Bureau can not undertake to make miscellaneous photometric tests generally, but in special cases where the tests are of unusual character or importance, or can not be made in other laboratories, such tests will be made. The fees for calibration of portable photometers and illuminometers of various types, with accessories, range from \$5.00 to \$30.00. For such tests and others not listed in the schedule below, fees will be quoted according to the nature of the test and the amount of work required.

- (a) Standardization of a sector disk.....\$15.00
- (b) Two or more disks of same nominal disk opening, each..... 10.00
- (c) Reflection factor, regular reflection..... 5.00
- (d) Reflection factor measurements on materials, each sample..... 2.00
- (e) Transmission factor measurements, screens and filters, each sample..... 3.00
- (f) Calibration of brightness standard..... 10.00

