	Technical Specification of Verification and Inspection for Illuminance Meters	S/N	CNMV 200
		Rev.	1

1. This Technical Specification is developed pursuant to Paragraph 2, Articles 14 and 16 of the Weights and Measures Act.

2. The date of promulgation, document number, date of enforcement and content of the amendment are listed as follows:

Revision	Date of Promulgation	Document No. (Ching-Piao-Szu-Tzu)	Date of Enforcement	Content of Amendment
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2003-06-18	**Ministry of Economic Affairs**	**2003-07-01**

1. Scope: This Specification shall be applied to the verification and inspection of illuminance meters.

2. Construction:

2.1 The measuring unit of illuminance meter is "Lux," expressed by the symbol of "lx."

2.2 The following items shall be indelibly marked on an easily visible position of each illuminance meter to avoid misrecognition:

(1) Class (AA, A or B);

(2) Type and serial number;

(3) Manufacturer's name or trademark; and

(4) Measuring range of illuminance (if there are two and more measuring ranges, they shall be labeled separately).

2.3 The light-receiver can be spearated from illuminance meter in application. Both of the two parts shall be labeled by identical serial number and manufacturer's name or trademark.

2.4 If the illuminance meter is equipped with a removable light attenuation filter, the same serial number shall be labeled on the illuminance meter and light attenuation filter and a protective cover shall be provided. Whenever the filter is taken off and put back again, the relative position of the two parts shall be maintained.

2.5 The displaying mechanism of the body of an illuminance meter shall be able to be adjusted and zero-setting.

2.6 The displaying mechanism of the body of an illuminance meter shall have a difference in illumination values, between horizontal position and any other position 30 degrees inclined from horizontal axis, that does not exceed the number of 2% of the maximum indicating scale in the measuring range.

2.7 The minimum scale intervals shall be no greater than 2% of the maximum indicating scale in the measuring range for analog illuminance meters, and no greater than 1% of the maximum indicating scale for digital illuminance meters.

2.8 If the illuminance meter is battery-powered, it shall indicate the rated voltage and display the state of insufficient power.

3. Verification, inspection and maximum permissible error

3.1 Verification and inspection equipment: certificates of traceability and uncertainty shall be provided.

(1) Standard light source: conforming to temperature color of 2856K ±10K.

(2) Standard darkroom: optic darkroom.

(3) Optic sliding rail.

(4) Power supply: being able to output DC voltage and current to light up emitted light source.

(5) Current distributor: being able to withstand DC current applied to light up emitted light source.

(6) Digital meter: being able to read the DC voltage required.

(7) Angle turning disc: being able to rotate at least 180º.

(8) Timing device: minimum scale interval being smaller than 0.1 sec.

3.2 After the illuminance meter has been emitted a light radiant strength equivalent to two thirds of the maximum illumination value of the measuring range, the display value that degrades the illumination to zero by constant rate shall not exceed 1% of the maximum illumination value of the measuring range.

3.3 The illuminance meter, having been emitted a light radiant strength from zero to that equivalent to one half of the maximum illumination value of the measuring range, shall display the illumination value within 5 second.

3.4 When the light receiver has received and displayed the illumination equivalent to two thirds of the maximum illumination value of the measuring range, the display values between 1 minute and ten minutes shall not be greater than ±1% of the 1-minute display value.

3.5 Emit parallel light beam in the strength approaching to maximum scale to the base surface of light receiver. Rotate the base surface 30°, 60° and 80° relative to the two axes perpendicular to each other and count the test value by using the formula defined below. The calculated result shall not exceed the error defined in Table 1.

$$\frac{|E - E_0 COS\theta|}{E_0 COS\theta} \times 100\%$$

θ = The rotated angle.
Eo = The indicated illumination when θ is zero degree.
E = The indicated illumination after rotated θ angle.

Table 1

Rotated angle	Class AA Error	Class A Error	Class B Error
30°	±2%	±3%	±3%
60°	±7%	±10%	±10%
80°	±25%	±30%	---

If the illuminance meter is equipped with a removable light attenuation filter, it shall comply with the values defined in Table 1.

3.6 The maximum permissible error of verification of the illuminance meter illumination value should not exceed the plus/minus percentage of the maximum value in measuring range shown in Table 2.

Table 2

Class	Percent of calculated result
AA	±4%
A	±7%
B	±10%

The test procedure is illustrated below.

Apply three illuminations that pass through the center of test base plane and shot one minute of light in vertical direction. Compare the illumination value measured with the one counted from the standard piece at the same location.

3.7 The inspection maximum permissible error of illuminance meter is 1.5 times of the maximum permissible error of verification.

3.8 The period of validity of verification is 2 years, commencing from the day of a verification compliance mark affixed to the illuminance meter and expiring on the first day of the next month of next year.

4. The verification compliance marks

4.1 The verification compliance marks of illuminance meters shall be affixed to a prominent place of the body of an illuminance meter.

4.2 A verification certificate shall be issued after the illuminance meters pass verification.