

**Performance of electrical lighting equipment — Ballasts for fluorescent lamps  
— Part 1: Energy labeling and minimum energy performance standards  
requirements**

**PUBLIC REVIEW DRAFT, JANUARY 2013**

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The Kenya National Chamber of Commerce and Industry  
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**Performance of electrical lighting equipment — Ballasts for fluorescent lamps  
— Part 1: Energy labeling and minimum energy performance standards  
requirements**

## Foreword

This Kenya Standard was developed by the Technical Committee on Electric lamps and Wiring Accessories and is in accordance with the procedures of the Bureau.

## References

For the purposes of this standard, the references to International Standards should be replaced by references to the appropriate Kenya Standards where they have been declared.

PUBLIC REVIEW DRAFT

## **Performance of electrical lighting equipment — Ballasts for fluorescent lamps — Part 1: Energy labeling and minimum energy performance standards requirements**

### **1 SCOPE**

This Draft Kenya Standard specifies requirements for the classification of ballasts for a range of fluorescent lamp types (refer to Tables 1 to 3) according to their Energy Efficiency Index (EEI) and the form of labeling of the EEI, which is generally shown on the ballast rating plate.

This Standard also specifies the Minimum Energy Performance Standards (MEPS) requirements for certain fluorescent lamp ballasts.

The ballasts covered by this standard are the ferromagnetic or electronic type, that are used with fluorescent lamps with a rated lamp power from 10 W to 70 W, for use on 50 Hz supplies of 230/240/250 V or a range which includes one or more of these voltages.

This standard covers ballasts that are supplied as separate components or as part of a luminaire. This standard does not cover the following ballast-lamp combinations:

- a) primarily for use on d.c. supply or batteries;
- b) primarily for the production of light outside the visible spectrum, that is, 400 nm to 800 nm; and
- c) hazardous area lighting equipment.

### **2 Application**

This standard provides a classification and energy labeling scheme for ballasts for fluorescent lamps and in addition defines MEPS requirements. This standard shall be used together with KS 2447-2:2013.

### **3 Normative references**

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

KS 2447-2:2013, Performance of electrical lighting equipment — Ballasts for fluorescent lamps — Method of measurement to determine energy consumption and performance of ballast-lamp circuits

IEC 60921, Ballasts for tubular fluorescent lamps — Performance requirements

IEC 60929, Auxiliaries for lamps—A.C. supplied electronic ballasts for tubular fluorescent lamps — Performance requirements

IEC 61231, International lamp coding system (ILCOS)

IEC 61241 (all parts), Electrical apparatus for use in the presence of combustible dust

### **4 Terms and definitions**

For the purposes of this standard, the terms and definitions given in KS 2447-2:2013 and the following apply.

#### 4.1

#### Energy Efficiency Index (EEI) classification

alphanumeric indicator (dimensionless) related to the corrected total input power of a ballast-lamp circuit under test, ranging from A (most efficient) to D (least efficient)

#### 4.2

#### Minimum Energy Performance Standards (MEPS)

maximum permitted corrected total input power of a ballast-lamp circuit specified in this standard

#### 4.3

#### supplier

for products manufactured in Kenya 'supplier' means the manufacturer or, where a completed product is manufactured for exclusive supply to a second agent, the second agent may be identified as the supplier. For products manufactured outside Kenya 'supplier' means manufacturer's local agent or importer, having an address in the country(s) where the product is sold (Kenya).

#### 4.4

#### total input power

total power supplied (in watts) to the ballast-lamp circuit measured at the test voltage

#### 4.5

#### corrected total input power

total input power in watts of the ballast lamp circuit under test corrected to comparable reference conditions

### 5

#### Energy Efficiency Index (EEI) classification and labeling

#### 5.1

#### Determination of corrected total input power ( $P_{tot.cor.}$ )

##### 5.1.1

#### Number of samples

At least one ballast shall be tested in accordance with KS 2447-2:2013. At the supplier's discretion, more than one ballast may be tested to verify performance and demonstrate increased confidence of conformance of the product to this standard.

The corrected total input power shall be determined for each ballast as specified in 5.1.2.

##### 5.1.2

#### Determination of ballast efficiency

5.1.2.1 Where required, measure the light output in lumens and total circuit power with a test ballast and the reference lamp. Repeat the above measurement with a reference ballast and the same reference lamp. The BLF is defined as the ratio of the light output of the test system (test ballast/ reference lamp combination) to the light output of the reference system (reference ballast/ reference lamp combination). (Expressed as BLF = 1.00 when they are equal).

$$BLF = \left( \frac{L_{test}}{L_{ref.}} \right) \dots(1)$$

where

$L_{test}$  is the measured light output, in lumens, of the reference lamp when connected to the test ballast; and

$L_{ref.}$  is the measured light output, in lumens, of the reference lamp when connected to the reference ballast

**5.1.2.2** Where the ballast performance parameters have been determined in accordance with KS 2447-2:2013 Annex C, the corrected total input power of a ballast-lamp circuit shall be determined from Equation 2.

NOTE Applies to all ballasts excluding mains frequency ferromagnetic ballasts with two wire connection and with an external starter. These are covered in 5.1.2.3.

$$P_{tot.cor.} = P_{tot.test} \times \left( \frac{P_{rated}}{P_{ref.}} \right) \times \left( \frac{1}{BLF} \right) \quad \dots (2)$$

where,

$P_{rated}$  is the rated lamp or typical HF power in watts of the relevant reference lamp according to lamp data sheet

$P_{ref.}$  is the measured lamp power in watts with the reference ballast

$P_{tot.cor.}$  is the total input power in watts of the ballast-lamp circuit under test corrected to comparable reference conditions

$P_{tot.test}$  is the total input power in watts of the ballast-lamp circuit with reference lamp and test ballast

**5.1.2.3** Where the ballast performance parameters have been determined in accordance with KS 2447-2:2013 Annex E, the corrected total input power of a ballast-lamp circuit shall be determined from Equation 3.

NOTE Applies only to mains frequency ferromagnetic ballasts with two-wire connection and with an external starter.

$$P_{tot.cor.} = P_{tot.test} \left[ \frac{P_{ref.} \times 0.95}{P_{test}} \right] - (P_{ref.} - P_{rated}) \quad \dots (3)$$

where,

$P_{rated}$  is the rated lamp or typical HF power in watts of relevant reference lamp according to the lamp data sheet

$P_{ref.}$  is the measured lamp power in watts with the reference ballast

$P_{test}$  is the measured lamp power in watts with the test ballast

$P_{tot.cor.}$  is the total input power in watts of the ballast lamp circuit under test corrected to comparable reference conditions

$P_{tot.test}$  is the measured total input power in watts into the ballast-lamp circuit under test

NOTE Information from CELMA indicates that the ferromagnetic ballasts are typically manufactured to operate the lamps at approximately BLF of 0.95. The factor 0.95 is used since it is being applied in Europe for ferromagnetic ballasts.

## 5.2 Determination of average corrected total input power

Where more than one ballast is tested in accordance with KS 2447-2:2013 the determined values of corrected total input power shall be averaged and the average shall not be rounded.

## 5.3 Determination of EEI classification

### 5.3.1 Classification tables

The EEI classification shall be obtained from tables 1 to 3 (as applicable) for the particular lamp type arrangement and rated power, using the value for average corrected total input power determined in accordance with 5.1 and 5.2.

### 5.3.2 Additional requirements for A1 classification

A ballast marked with classification EEI=A1 shall comply with the following additional requirements:

- a) the ballast shall be dimmable.
- b) corrected total input power at rated voltage shall not exceed the value specified in tables 1 to 3 (as applicable), Column A1.
- c) total input power at 25 % light output shall not exceed 50 % of the value specified in tables 1 to 3 (as applicable), Column A1.
- d) the ballast shall be capable of dimming the lamp to 10 % light output. Items (c) and (d) shall be confirmed by testing.

### 5.4 Labeling of EEI

Ballasts subject to MEPS shall be labeled legibly with the EEI classification and in the appropriate form, for example: 'EEI = A3'. The EEI classification may be used on a voluntary basis for other fluorescent lamp ballasts outside the scope of MEPS.

## 6 Performance requirements

### 6.1 General

The performance criteria set out in 6.2 to 6.4 shall be met by each individual unit tested, where applicable, for the fluorescent lamp ballast model to comply with this standard.

### 6.2 Performance prerequisites

This standard does not specify safety requirements that are contained in separate standards and regulations.

Fluorescent lamp ballasts within the scope of MEPS (refer to 6.4) and those that use the EEI energy classification and labelling scheme on a voluntary basis shall conform to Clause 5 in this standard and to the following standards:

- a) ferromagnetic ballasts: IEC 60921; and
- b) electronic ballasts: IEC 60929.

### 6.3 BLF declaration

A ballast shall be provided with a declaration of its BLF for each of its recommended ballast-lamp combinations.

### 6.4 Minimum Energy Performance Standards (MEPS)

A ballast that is used with ILCOS lamp type FD (type T) lamps listed in Tables 1 to 3, shall comply with the following requirements as appropriate:

- a) For ferromagnetic ballasts with a minimum rated voltage  $\geq 250$  V — Corrected total input power shall be less than or equal to the EEI value for B2 as specified in Table 1.
- b) For ferromagnetic ballasts with a minimum rated voltage  $\geq 240$  V and  $< 250$  V — Corrected total input power shall be less than or equal to the EEI value for B2 as specified in Table 2.



- c) For all other ballasts — Corrected total input power shall be less than or equal to the EEI value for B2 as specified in Table 3.

Ballasts that are intended for use with ILCOS lamp types FD, FSD, or FSS compact 4 tube flat (type T, type TC-L or type TC-F lamps) listed in Table 3, or that may be used with those lamps, shall comply with the requirements for an EEI classification of B1.

## 7 Application and test results formats

### 7.1 Application for registration

#### 7.1.1 General

For registration or approval of Minimum Energy Performance standard requirements, clauses 7.1.2 and 7.1.3 shall apply.

#### 7.1.2 Registration

For MEPS registration of the tubular fluorescent lamp brand and model, or type, an application in the format shown in Annex A of this standard shall be submitted. To register, the state regulatory authority should be contacted.

#### 7.1.3 Test report

A test report summary in accordance with Annex B for each model tested should be submitted with the MEPS application.

#### 7.1.4 Supporting documents

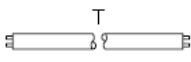
All supporting documents and test reports used in the MEPS application and any summary report in Annex B shall be made available to the relevant regulatory authority upon request. These records shall be retained for at least six years after the last date of manufacture or import, whichever is applicable.

#### 7.1.5 MEPS transition

All products within the scope of MEPS manufactured or imported for sale into Kenya One year after the gazettment of MEPS.

TABLE 1

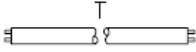
**BALLASTS FOR FLUORESCENT LAMPS—EEI CLASSIFICATION FOR RATED VOLTAGE  $\geq 250$  V**

Lamp type and arrangement	Nominal lamp power* Watts	ILCOS code	Maximum corrected total input power, Watts						
			Energy Efficiency Index (EEI) classification						
			A1†	A2	A3	B1	B2	C	D
Linear 	15	FD-15-E-G13-26/450	≤18.0	≤16.0	≤18.0	≤21.0	≤24.0	≤25.0	>25.0
	18	FD-18-E-G13-26/600	≤21.0	≤19.0	≤21.0	≤24.0	≤27.0	≤28.0	>28.0
	30	FD-30-E-G13-26/895	≤33.0	≤31.0	≤33.0	≤36.0	≤39.0	≤40.0	>40.0
	36	FD-36-E-G13-26/1200	≤38.0	≤36.0	≤38.0	≤41.0	≤44.0	≤45.0	>45.0
	38	FD-38-E-G13-26/1047	≤40.0	≤38.0	≤40.0	≤43.0	≤46.0	≤47.0	>47.0
	58	FD-58-E-G13-26/1500	≤59.0	≤55.0	≤59.0	≤64.0	≤68.0	≤70.0	>70.0
	70	FD-70-E-G13-26/1800	≤72.0	≤68.0	≤72.0	≤77.0	≤81.0	≤83.0	>83.0

NOTE 1 Refer to International Lamp Coding System (ILCOS).

NOTE 2 Applies only to mains frequency ferromagnetic ballasts with two-wire connection and with an external starter.

**TABLE 2**  
**BALLASTS FOR FLUORESCENT LAMPS—EEI CLASSIFICATION FOR RATED VOLTAGE  $\geq 240$  V AND  $< 250$  V**

Lamp type and arrangement	Nominal lamp power* Watts	ILCOS code	Maximum corrected total input power, Watts						
			Energy Efficiency Index (EEI) classification						
			A1†	A2	A3	B1	B2	C	D
Linear 	15	FD-15-E-G13-26/450	$\leq 18.0$	$\leq 16.0$	$\leq 18.0$	$\leq 21.0$	$\leq 23.5$	$\leq 25.0$	$> 25.0$
	18	FD-18-E-G13-26/600	$\leq 21.0$	$\leq 19.0$	$\leq 21.0$	$\leq 24.0$	$\leq 26.5$	$\leq 28.0$	$> 28.0$
	30	FD-30-E-G13-26/895	$\leq 33.0$	$\leq 31.0$	$\leq 33.0$	$\leq 36.0$	$\leq 38.5$	$\leq 40.0$	$> 40.0$
	36	FD-36-E-G13-26/1200	$\leq 38.0$	$\leq 36.0$	$\leq 38.0$	$\leq 41.0$	$\leq 43.5$	$\leq 45.0$	$> 45.0$
	38	FD-38-E-G13-26/1047	$\leq 40.0$	$\leq 38.0$	$\leq 40.0$	$\leq 43.0$	$\leq 45.5$	$\leq 47.0$	$> 47.0$
	58	FD-58-E-G13-26/1500	$\leq 59.0$	$\leq 55.0$	$\leq 59.0$	$\leq 64.0$	$\leq 67.5$	$\leq 70.0$	$> 70.0$
	70	FD-70-E-G13-26/1800	$\leq 72.0$	$\leq 68.0$	$\leq 72.0$	$\leq 77.0$	$\leq 80.5$	$\leq 83.0$	$> 83.0$

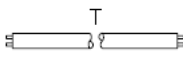

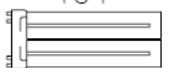


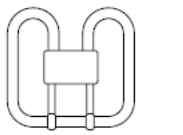
NOTE 1 Refer to International lamp coding system (ILCOS).

NOTE 2 Applies only to mains frequency ferromagnetic ballasts with two-wire connection and with an external starter.

\* Nominal values shown may have different rated values. Refer to the relevant lamp data sheet.

† Refer to 5.3.2.

**TABLE 3**  
**BALLASTS FOR FLUORESCENT LAMPS—EEI CLASSIFICATION**

Lamp type and arrangement	Nominal lamp power* Watts	ILCOS code	Maximum corrected total input power, Watts						
			Energy Efficiency Index (EEI) classification						
			A1†	A2	A3	B1	B2	C	D
Linear 	15	FD-15-E-G13-26/450	≤18.0	≤16.0	≤18.0	≤21.0	≤23.0	≤25.0	>25.0
	18	FD-18-E-G13-26/600	≤21.0	≤19.0	≤21.0	≤24.0	≤26.0	≤28.0	>28.0
	30	FD-30-E-G13-26/895	≤33.0	≤31.0	≤33.0	≤36.0	≤38.0	≤40.0	>40.0
	36	FD-36-E-G13-26/1200	≤38.0	≤36.0	≤38.0	≤41.0	≤43.0	≤45.0	>45.0
	38	FD-38-E-G13-26/1047	≤40.0	≤38.0	≤40.0	≤43.0	≤45.0	≤47.0	>47.0
	58	FD-58-E-G13-26/1500	≤59.0	≤55.0	≤59.0	≤64.0	≤67.0	≤70.0	>70.0
	70	FD-70-E-G13-26/1800	≤72.0	≤68.0	≤72.0	≤77.0	≤80.0	≤83.0	>83.0
Compact 2 tube 	18	FSD-18-E-2G11	≤21.0	≤19.0	≤21.0	≤24.0	≤26.0	≤28.0	>28.0
	24	FSD-24-E-2G11	≤27.0	≤25.0	≤27.0	≤30.0	≤32.0	≤34.0	>34.0
	36	FSD-36-E-2G11	≤38.0	≤36.0	≤38.0	≤41.0	≤43.0	≤45.0	>45.0
	40	FSDH-40-L/P-2G11	≤46.0	≤44.0	≤46.0	—	—	—	—
	55	FSDH-55-L/P-2G11	≤63.0	≤59.0	≤63.0	—	—	—	—
Compact 4 tube flat 	18	FSS-18-E-2G10	≤21.0	≤19.0	≤21.0	≤24.0	≤26.0	≤28.0	>28.0
	24	FSS-24-E-2G10	≤27.0	≤25.0	≤27.0	≤30.0	≤32.0	≤34.0	>34.0
	36	FSS-36-E-2G10	≤38.0	≤36.0	≤38.0	≤41.0	≤43.0	≤45.0	>45.0
Compact 4 tube (not flat) 	10	FSQ-10-E-G24q = 1 FSQ-10-I-G24d = 1	≤13.0	≤11.0	≤13.0	≤14.0	≤16.0	≤18.0	>18.0
	13	FSQ-13-E-G24q = 1 FSQ-13-I-G24d = 1	≤16.0	≤14.0	≤16.0	≤17.0	≤19.0	≤21.0	>21.0
	18	FSQ-18-E-G24q = 2 FSQ-18-I-G24d = 2	≤21.0	≤19.0	≤21.0	≤24.0	≤26.0	≤28.0	>28.0
	26	FSQ-26-E-G24q = 3 FSQ-26-I-G24d = 3	≤29.0	≤27.0	≤29.0	≤32.0	≤34.0	≤36.0	>36.0
Compact 6 tube 	18	FSM-18-I-GX24d = 2 FSM-18-E-GX24q = 2	≤21.0	≤19.0	≤21.0	≤24.0	≤26.0	≤28.0	>28.0
	26	FSM-26-I-GX24d = 3 FSM-26-E-GX24q = 3	≤29.0	≤27.0	≤29.0	≤32.0	≤34.0	≤36.0	>36.0
	32	FSMH-32-L/P-GX24q = 4	≤39.0	≤36.0	≤39.0	—	—	—	—
	42	FSMH-42-L/P-GX24q = 4	≤49.0	≤46.0	≤49.0	—	—	—	—
Compact 2D (double D) 	10	FSS-10-E-GR10q FSS-10-L/P/H-GR10q	≤13.0	≤11.0	≤13.0	≤14.0	≤16.0	≤18.0	>18.0
	16	FSS-16-I-GR8 FSS-16-E-GR10q FSS-16-L/P/H-GR10q	≤19.0	≤17.0	≤19.0	≤21.0	≤23.0	≤25.0	>25.0
	21	FSS-21-E-GR10q FSS-21-L/P/H-GR10q	≤24.0	≤22.0	≤24.0	≤27.0	≤29.0	≤31.0	>31.0
	28	FSS-28-I-GR8 FSS-28-E-GR10q FSS-28-L/P/L-GR10q	≤31.0	≤29.0	≤31.0	≤34.0	≤36.0	≤38.0	>38.0
	38	FSS-38-E-GR10q FSS-38-L/P/L-GR10q	≤40.0	≤38.0	≤40.0	≤43.0	≤45.0	≤47.0	>47.0
	55	FSS-55-E-GRY10q = 3 FSS-55-L/P/L-GRY10q = 3	≤63.0	≤59.0	≤63.0	—	—	—	—

NOTE Refer to IEC 61231, International lamp coding system (ILCOS)

\* Nominal values shown may have different rated values. Refer to the relevant lamp data sheet. † Refer to 5.3.2.

## APPENDIX A (normative)

### Notification of energy performance characteristics

#### A1 Scope

This annex gives the information required for an application for registration or renewal of registration of ballasts for fluorescent lamps for energy efficiency determination.

#### A2 Application form

##### Application details

I hereby apply for registration of fluorescent ballast(s) for the purpose of energy efficiency determination pursuant to the KS 2447-1:2013.

<b>SECTION 1: Details of manufacturer/importer (please type or print)</b>			
Name of applicant:	.....		
Company name:	.....		
Company address:	.....		
Contact person: (A name, address and contact details for a person in Kenya shall be provided)	Name:	.....	
	Address:	.....	
	Position/Title:	.....	
	Telephone:	.....	
	Facsimile:	.....	
	E-mail:	.....	
The Standard under which this application is made:	<b>KS 2447-1:2013</b>		
Is the application meant for a single model or a family of models? (identify one)	<input type="checkbox"/> Single		
	<input type="checkbox"/> Multiple		
<b>SECTION 2: DESCRIPTION OF ELECTRIC MOTOR</b>			
Country of manufacture:			
Name of manufacturer:			
Brand name:			
Model name(if available):			
Model number or family number:			
Year and month model(s) first manufactured		imported:	
If registering a family of models, list all model names and numbers covered by this application:			
Year and month in which model first available in Kenya:			
Is the date of manufacture permanently marked on the rating plate in a non-encrypted format? (indicate correct answer)	Yes:		
	No:		
If the date of manufacture is permanently marked on the			

rating plate in a non-encrypted format provide a description of the date format			
If the date of manufacture IS NOT permanently marked on the rating plate in a non-encrypted format, provide details of how to determine (from the serial number or other permanent markings for this model) whether the date of manufacture was either: a) in the 5 year period prior to the introduction of MEPS; or b) in the 5 year period subsequent to the introduction of MEPS NOTE Only one of the options a) or b) is required			
Does this model or family replace or supplement another model or family with the same specifications? (identify one)	Yes		
	No		
If yes, indicate relevant details:	Model name:	Model number:	Registration number:
<b>SECTION 3: TESTING AND TEST REPORT</b>			
Is a test report attached? (indicate correct answer)	<input type="checkbox"/> Yes  <input type="checkbox"/> No		
If no test report is attached note the source registration number of the appliance upon which this application relies for its test report: (Proceed to Section 5 if no report attached)			
Test laboratory type: (identify one)	<input type="checkbox"/> Own 'in-house' laboratory  <input type="checkbox"/> Independent laboratory		
Test laboratory name:			
Test laboratory address:			
Test laboratory location: (indicate whether in Kenya or outside Kenya)			
Contact details of the person who conducted the tests:			
Test laboratory accreditation:			
Application to standard (indicate correct answer)	<input type="checkbox"/> KS 2447-1:2013  <input type="checkbox"/> Other-please specify		

Test Standard used: (Identify standard by number)	<input type="checkbox"/> KS 2447-2:2013 <input type="checkbox"/> Other-please specify																																															
Test voltage (V)																																																
Reference lamp details	Rated lamp power (W):																																															
Test report number(s) and date(s):																																																
<b>SECTION 4: SPECIFIC EQUIPMENT DETAILS</b>																																																
The data required for this section can be entered into an on-line database which has full information on the required options for each field. The values submitted below shall be based on a type test of a representative production version of the motor model in question.																																																
Motor test method applicable:	<b>KS 2447-1:2013</b>																																															
	Other (please specify):																																															
Ballast type (indicate correct answer)	<input type="checkbox"/> Electronic <input type="checkbox"/> Ferromagnetic																																															
Starter type (indicate correct answer)	<input type="checkbox"/> None <input type="checkbox"/> Rapid <input type="checkbox"/> Instant <input type="checkbox"/> External																																															
Ballast rated voltage (or voltage range)																																																
Is the ballast part of an imported luminaire? (indicate correct answer)	<input type="checkbox"/> Yes <input type="checkbox"/> No																																															
If the ballast is part of an imported luminaire state the details and marking of the luminaire	Brand:																																															
	Model:																																															
	Other identifiers:																																															
<b>SECTION 5: MINIMUM ENERGY PERFORMANCE STANDARDS (MEPS)</b>																																																
<table border="1"> <thead> <tr> <th>Recommended lamp types ILCOS 'L' codes</th> <th>FD FDR FDU FDH FS FSD</th> <th>FSQ FSS FSM FSC FSG FSH</th> <th>FBT FBC FBG FBR</th> </tr> </thead> <tbody> <tr> <td rowspan="10">Recommended lamp rating(s) (W) (indicate correct answer(s))</td> <td>10</td> <td>30</td> <td>2x10</td> <td>2x30</td> </tr> <tr> <td>13</td> <td>32</td> <td>2x13</td> <td>2x32</td> </tr> <tr> <td>15</td> <td>36</td> <td>2x15</td> <td>2x36</td> </tr> <tr> <td>16</td> <td>38</td> <td>2x16</td> <td>2x38</td> </tr> <tr> <td>18</td> <td>40</td> <td>2x18</td> <td>2x40</td> </tr> <tr> <td>21</td> <td>42</td> <td>2x21</td> <td>2x42</td> </tr> <tr> <td>24</td> <td>55</td> <td>2x24</td> <td>2x55</td> </tr> <tr> <td>26</td> <td>58</td> <td>2x26</td> <td>2x58</td> </tr> <tr> <td>28</td> <td>70</td> <td>2x28</td> <td>2x70</td> </tr> <tr> <td></td> <td colspan="3">Other – please specify</td> </tr> </tbody> </table>	Recommended lamp types ILCOS 'L' codes	FD FDR FDU FDH FS FSD	FSQ FSS FSM FSC FSG FSH	FBT FBC FBG FBR	Recommended lamp rating(s) (W) (indicate correct answer(s))	10	30	2x10	2x30	13	32	2x13	2x32	15	36	2x15	2x36	16	38	2x16	2x38	18	40	2x18	2x40	21	42	2x21	2x42	24	55	2x24	2x55	26	58	2x26	2x58	28	70	2x28	2x70		Other – please specify					
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	26	58	2x26	2x58																																												
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		Other – please specify																																														
Method of test (indicate correct answer)	<input type="checkbox"/> Annex C of KS 2447-2:2013																																															

	<input type="checkbox"/> Annex E of KS 2447-2:2013
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**Test results**

Test results	Test Unit No.	Total Input Power – unadjusted (W)	Corrected Total Input Power (W)
	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	Average		

**Energy Efficiency Index Classification**

Energy Efficiency Index Classification <i>(indicate correct answer)</i>	A1	A2	A3	B1	B2	C	D
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**Minimum Energy Performance Declaration**

In accordance with which table was the Energy Efficiency Index Classification determined? <i>(indicate correct answer)</i>	<input type="checkbox"/> Table 1 <input type="checkbox"/> Table 2 <input type="checkbox"/> Table 3
Does each of the test units comply with the minimum energy performance standard? <i>(Indicate correct answer)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No

**Performance Prerequisites Declaration**

Does the model comply with the performance prerequisites noted in clause 6.2? <i>(Indicate correct answer)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No
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**BLF Declaration**

State the BLF determined in accordance with clause 6.3 for each ballast-lamp combination as recommended above	<b>Lamp type</b>	<b>BLF</b>	<b>Lamp type</b>	<b>BLF</b>
	FD		FSM	
	FDR		FSC	
	FDU		FSG	

	FDH		FSH	
	FS		FBT	
	FSD		FBC	
	FSQ		FBG	
	FSS		FBR	

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**SECTION 6: DECLARATION**

I declare that the details stated above are true and correct in accordance with the requirements of KS 2447-1:2013.

Signature of Applicant:..... Date .....

For office use only:

Date received: ..... Registration number .....

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PUBLIC REVIEW DRAFT