lites.asia Regional Lighting Policy Meeting

Bangkok, Thailand

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Introduction of South-East Asia Project

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Content

- Who is GELC?
- Activities of South-East Asia Project
- Activity 1 Lamp testing
- Activity 2 Inter-laboratory Comparison test
- Activity 3 & 4 Training

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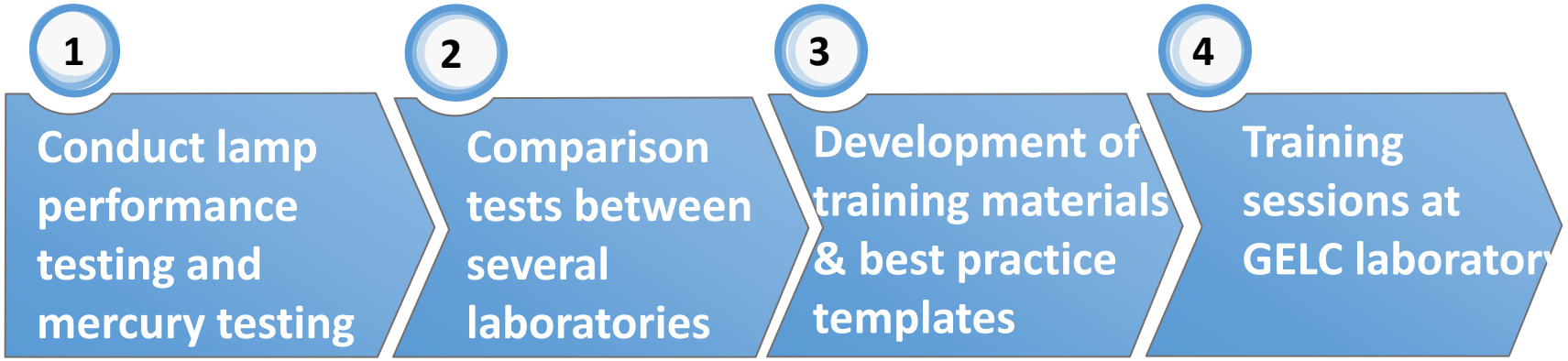
Who is GELC?


Quality Control
Lab Capacity Building
Training
Our Vision
Technical Advisory and Information Sharing
Technology Research

Activities of South-East Asia Project



Activity 1 Lamp testing

- **Type:** Integral (self-ballasted); for indoor lighting, general lighting service applications; omnidirectional light distribution pattern; no cover (bare lamp).
- **Lamp base:** “Normal” size for typical socket in the country. For example, for a screw base lamp, choose E26 or E27 base.
- **Voltage:** Between 100V to 240V; mains voltage (per country requirements).
- **Other features**: Do not purchase lamps with other electrical or functional features such as dimming or remote control.
- **Wattage**: Lamp wattage ≥5W and ≤30W;

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Activity 1 Lamp testing

- **Type:** Integral (self-contained driver); for indoor lighting, general service applications; omnidirectional light distribution pattern
- **Lamp base:** “Normal” size for typical socket in the country. For example, for a screw base lamp, choose E26 or E27 base.
- **Voltage:** Between 100V to 240V; mains voltage (per country requirements).
- **Other features**: *Note: do not purchase lamps with other electrical or functional features such as dimming, color-changing or remote control.*
- **Wattage**: Lamp wattage ≥5W and ≤15W;

Activity 1 Lamp testing

Country	CFL lamps received (model)	LED lamps received (model)	Apparent condition (number of broken lamps)
Cambodia	14	3	1
Indonesia*	15	4	0
Laos PDR	11	2	0
Philippine	14	4	1
Thailand	14	4	0
Vietnam	13	3	3
Total	**81**	**20**	**5**

* One model is found has two different parameters, so it divided into two models when testing

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Activity 1 Lamp testing

Reference Standards

- ***Performance test reference standards***
  - IEC 60969 Self-ballasted lamps for general lighting services – Performance requirements
  - IEC/PAS 62612 Self-ballast LED-lamps for general lighting services – Performance requirements
  - LM79 Electrical and Photometric Measurements of Solid-State Lighting Products
- ***Mercury test reference standard***
  - IEC 62554 Sample preparation for measurement of mercury level in fluorescent lamps
  - IEC 62321 Electrotechnical products - Determination of levels of six regulated substances (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, polybrominated diphenyl ethers)

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Activity 1 Lamp testing

Compact Fluorescent Lamp

Initial Lamp power

Initial Power factor

Initial Luminous flux

Initial Efficacy

Initial CRI

Initial CCT

Initial SDCM

Lumen maintenance @ either 1000 hrs or 2000 hrs

Mercury content

Format of mercury

Light Emitting Diode Lamp

Lamp power @ 0 hour

Power factor @ 0 hour

CRI @ 0 hour

Luminous flux @ 0 hour

Efficacy @ 0 hour

Light distribution @ 0 hour

Lamp power @ 1000 hour

Power factor @ 1000 hour

CRI @ 1000 hour

Luminous flux at @ 1000 hour

Efficacy @ 1000 hour

Activity 2 Inter-laboratory Comparison test

Country	Laboratory Name	Type of Laboratory
Indonesia	B4T - Center for Material and Technical Products	Calibration (spectrophotometer) & Test Lab
Indonesia	Central Laboratory Operations Cibitung, Sucofindo PT (Persero)	Test Lab
Viet Nam	QUATEST 1 - Quality Assurance and Tesing Center 1	Test Lab
Viet Nam	QUATEST 3- Quality Assurance and Testing Center 3	Calibration Lab
Thailand	EEI - Industrial Foundation Electrical and Electronics Institute	Calibration Lab
Philippines	IIEE -Foundation Inc. Testing Laboratory	Test Lab

Activity 2 Inter-laboratory Comparison test

Each set of samples including three different kinds of LED lamp products will be sent from GELC to each participating lab.

Lamp Type	Picture	Rated Voltage	Rated Power	Nominal CCT
Omnidirectional LED lamp		12V	4 W	2700 K
Directional LED lamp		220 V AC	8 W	3000 K
High CCT LED lamp		220 V AC	6 W	5000 K

Activity 2 Inter-laboratory Comparison test

Parameters will be measured in this CT programme.

(1) Total luminous flux (lm)*

(2) RMS voltage (V) and RMS current (mA)

(3) Active power (W)*

(4) Luminous efficacy (lm/W)*

(5) Chromaticity x*and y*

(6) Correlated colour temperature (K)*

(7) Colour Rendering Index (CRI) Ra*

(8) Power factor (PF)

Note 1: Only the parameters marked with an asterisk (*) will be compared and analyzed applying the criteria in chapter 6.0 in this CT programme.

Note 2: Participating labs should show all decimal places, with at least four significant digits.

Present status for the CT

Lab name	Testing status	Note
Indonesia: B4T - Center for Material and Technical Products	In testing	
Indonesia: Central Laboratory Operations Cibitung, Sucofindo PT (Persero)	In testing	
Viet Nam: QUATEST 1 - Quality Assurance and Tesing Center 1	In testing	
Viet Nam: QUATEST 3- Quality Assurance and Testing Center 3	Finished on 30 Jan,, but one sample was broken	Sent a new sample again on 30 Jan.
Thailand: EEI - Industrial Foundation Electrical and Electronics Institute	In testing	
Philippines: IIEE -Foundation Inc. Testing Laboratory	Finished, feedback the test result on 30 Jan.	

Activity 3 & 4 Training

- 1. lamp testing guide
- 2. Preparation for lamp testing
- 3. Requirements for Equipment, Facilities and Environmental Conditions for Testing Lamps
- 4. Lamp Testing Processes and Any Cautions To Be Taken During Testing
- 5. Explanation of the Test Results Analyses Procedures-zt
- 10. Testing Equipment Needed to Conduct Lamp Tests
- 11. Overview of International Testing Standards for Lamps
- 12. Testing Processes for CFL and LED Lamps
- Formats for Recording Data
- Formats for test results
- 7. Lamp Performance Test Guide
- 9. Lamp Performance Testing Final Guide
- 13. How to Interpret Lamp Testing Results

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Training plan (TBD), on April

- International lighting technology development and trend
- Lamp performance test guide
- Preparing for lamp testing
- Requirements for equipment, facilities and environmental conditions for testing lamps
- Lamp testing process for CFL and LED lamps
- Introduction of Mercury content test- IEC 62554-2011
- Training on site (Group1: integrate sphere, Group2:mercury test)
- Introduction of Round Robin test
- Sharing and discussing session

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Thank you

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