Lighting Equipment
Energy Efficiency Standards and Labeling Program

CURRENT STANDARDS AND DEVELOPMENT PROCESS FOR LIGHTING

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2. CURRENT STANDARDS AND DEVELOPMENT PROCESS FOR LIGHTING

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YEAR OF 2005

-TCVN 7541-1 : 2005 High efficiency Lighting Equipments – Minium Energy Performance Standards (MEPS)

Application scope :

- **Fluorescent Lamps**
- **Electromagnetic Balasts**

–TCVN 7541 -2 : 2005 High efficiency Lighting Equipments – Test Method of Energy Eficiency (adoption of IEC Stds)

2. CURRENT STANDARDS AND DEVELOPMENT PROCESS FOR LIGHTING

YEAR OF 2008

- **TCVN 7896 : 2008 COMPACT Fluorescent Lamps – Energy Efficiency**
- **TCVN 7897 : 2007 Electonic Balasts – Energy Efficiency**

2 CURRENT STANDARDS AND DEVELOPMENT PROCESS FOR LIGHTING

YEAR OF 2009

Review and replace TCVN 7541-1 : 2005

High efficiency Lighting Equipments – Minium Energy Performance Standards (MEPS) by :

- **TCVN 7896 : 2009 Tubular Fluorescent Lamps – Energy Efficiency, and**
- **TCVN 7897 : 2009 Electromagnetic Balasts – Energy Efficiency**

General Requirements for Lighting

- **Safety Requirements** TCVN/ IEC 61195:1999
  TCVN/ IEC 60968:1999
- **Life time :** more than 6000 h
- Testing Standards : TCVN/ IEC 60969 : 2001
  TCVN/ IEC 60901 : 2000

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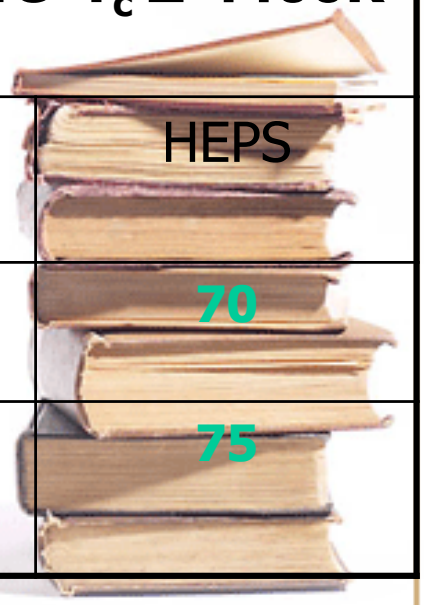
. Energy Efficiency Requirements of *Tubular Fluorescent Lamps*

Power W	Energy Efficiency lm/W			
	Temperature T_c<4400K		Temperature $T_c \geq$ 4400K	
	MEPS	HEPS	MEPS	HEPS
From 14 up to 20	58	72	55	70
From 20 up to 40	60	78	58	75



2 CURRENT STANDARDS AND DEVELOPMENT PROCESS FOR LIGHTING

. Energy Efficiency Requirements of *compact s Tubular Fluorescent Lamps (CFLs)*

Power W	Energy Efficiency lm/W			
	Temperature T_c<4400K		Temperature $T_c \geq$ 4400K	
	MEPS	HEPS	MEPS	HEPS
From 5 up to 8	45	55	40	50
From 9 up to 14	50	60	45	55
From 15 up to 24	55	65	50	60
From 25 up to 60	60	70	55	65

. Energy Efficiency Requirements of Balasts

- **Energy Efficiency Factor of *balast* (BEF)**

$$BEF = \frac{BF}{\text{Electric power (measured with test balast)}}$$

Whear BF : Balast factor

$$BF = \frac{\text{Lumen of refference lamp (measured with test balast)}}{\text{Lumen of refference lamp (measured with refference balast)}}$$

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. Energy Efficiency Requirements
of Electromagnetic Balasts

Power W	Energy Efficiency Factor of *balast* (BEF)	
	MEPS	HEPS
18	3,00	3,33
20	2,81	3,10
36	1,87	2,04
40	1,73	1,90

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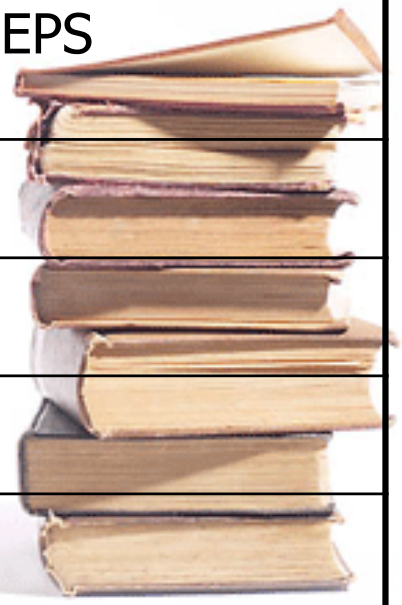
. Energy Efficiency Requirements of Electronic Balasts

Power W	Energy Efficiency Factor of *balast* (BEF)	
	MEPS	HEPS
18	4,78	5,52
20	4,37	5,05
32	2,68	3,04
36	2,40	2,68
40	2,27	2,47



3. Conformity assessment & certification activity

Energy saving Label & Regulation Mark

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Energy Labeling Scheme

Circle 08/TT-BCN dated 16/01/2006

Assessment Module:

- Type test
- Technical file Review &Manufacture visit
- Certificate Issue
- Labeling " Energy Saving "
- Post-Market surveilance

Requirement for testing Labs

- To ensure testing competance or
- To be accredited in conformity to ISO/IEC 17025
- To be Designated by MOIT

(Criteria for assessment is HEPS specified in TCVN – Voluntary certification)

3. Conformity assessment & certification activity

Conformity Marking to Regulation

Technical Regulation xx/BCT dated .../.../201Y

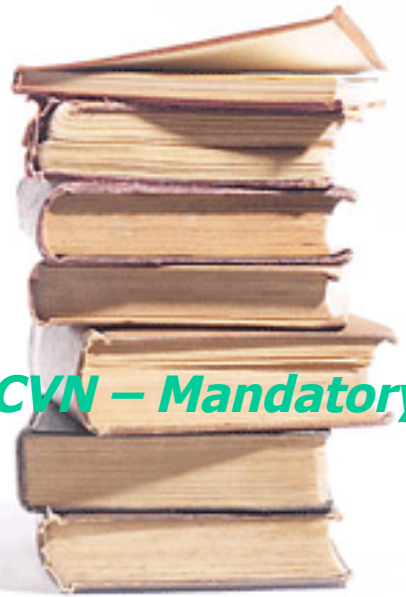
Assessment Module:

- Type test
- Technical file Review &Manufacture visit
- Certificate Issue
- Marking Mark
- Post-Market surveilance

Requirement for testing Labs

- To ensure testing competance or
- To be accredited in conformity to ISO/IEC 17025
- To be Designated by MOIT

(Criteria for assessment is MEPS specified in TCVN – Mandatory certification)



Thank for your attention !