



Update on Recent Work of IEC TC34 on CFLs and LEDs

Owen Manley
Lighting Council Australia



Standards - General

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- IEC, ISO and CIE are international standards development groups
- IEC – International Electrotechnical Commission
- IEC covers both safety and performance. Has mandate to include energy efficiency.
- IEC Tc34 have 3 CFL and 66 LED related changes to existing standards or new standards in development.
- ISO - International Standards Organisation
- New ISO Committee Tc274 Lighting focus on energy efficiency of buildings

Standards - General

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- CIE - International Commission on Illumination - has agreement with IEC and ISO to develop test method standards to advance science of light
- IES, UL, IEA, China, Taiwan, Australia, etc are developing national requirements, some based on IEC.
- IES usually performance, ie LM-79 LED testing, LM-80 & TM-21 on LED life time
- Australia, China and many other economies use IEC standards as basis

IEC – Tc34 Lighting CFL & LEDs - General

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IEC changes for:

- CFL are 60968 “Safety” and 60969 Performance and NWIP for technical specification for performance tiers
- LED changes, many are minor but there are important exceptions:
 - New safety specific standards, ie
 - 62560 Self ballasted LED lamps >50V
 - “ “ “ “ <50V
 - 62776 Double ended tubes (next is FDIS)
- Fast track for new performance standards ie PAS then standards, ie
 - 62772 Luminaire performance

IEC – Tc34 Lighting CFL & LEDs

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Many of the issues being developed for CFLs are leading the way for LEDs, ie

- inrush current,
- dimming,
- power factor or distortion and displacement factor?
- performance values that are quality related
- better discrimination of life time testing
- numbers of test samples
- performance tiers

IEC – Tc34 Lighting CFL & LEDs

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How many test samples are required to ensure conformance?

- Safety - type test on 1 sample.
- Performance, ie depends on parameter, ie dimensions -1 sample or life – multiple samples
- Minimum (energy) performance - multiple test samples

Modeling prepared by industry identified level of risk to ‘compliant’ products with relatively small test sample used.

IEC – Tc34 Lighting CFL & LEDs - Performance

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Reduce number of test samples vs conformance.

■ LIFE - Outcome

Test 10 samples to 100% of rated life

- Pass if ≤ 6 failures
- Fail if ≥ 7 failures.

Test 20 samples to 90% of rated life

- Pass if ≤ 10 failures
- Fail if ≥ 11 failures

IEC – Tc34 Lighting CFL

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- 60968 - Safety. **FDIS** publication 1/11/2013
- 60969 - Performance. 34A/1701/**CDV** due 1/11/2013.
- **TSxxx** - Performance TIERS. **NWIP** due 1/11/2013

- **FDIS** VOTE + Editorial comment only
- **CDV** VOTE + Technical comment allowed
based on PRESCO(OM)032
- **NWIP** **New Work Item Proposal**
for Technical Specification requires:
VOTE + reasons + experts.

CFL – New Work Item Proposal (NWIP)

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IEC rules for an New Work Item Proposal for a Technical Specification are;

- 1) Proposal Stage – NWIP circulated.
Meeting NWIP criteria is acceptance.
- 2) Preparation stage. Update the NWIP draft and circulate committee draft Technical Specification as CD (IEC directive 1 Section 2.4)
- 3) Drafting Stage. National Committee (NC) comment and acceptance of the CD. (IEC Dir 1 Sec 2.5).
PRESCO will approve publication of TS with 2/3 P member vote, leads to -
- 4) Publication

CFL – New Work Item Proposal (NWIP)

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A new work item proposal (NWIP) is required for new standards, technical specification or report.

An NWIP may be made by;

- **a national body;**
- the secretariat of the TC or subcommittee;
- another TC or subcommittee;
- an organization in liaison;
- the technical management board or one of its advisory groups;
- the Chief Executive Officer.

CFL – New Work Item Proposal (NWIP)

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NWIP is required for a Technical Specification.

Requires:

- Originator or project leader (Owen Manley)
- a first working draft or an outline for discussion, ie PRESCO(OM)034c
- circulation of NWIP to TC34 subcommittee (PRESCO) National Committees for P-member ballot & O-members
- proposed publication date – 2015. (Votes to be returned within 3 months (proposed January 2014 for Jan. panel.
- P-members agreeing to participate actively in the work shall nominate expert(s).

CFL – New Work Item Proposal (NWIP)

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NWIP acceptance requires:

- a) minimum 50% P member vote with a commitment to participate actively in the project stage 2 - preparation and stage 3 – drafting, i.e. to make an effective contribution by commenting on drafts.
- b) nominate minimum 5 P-member technical expert participants.

(only P-members having also approved the inclusion of the NWIP work item in the programme of work will be taken into account when making this tally).

Next is stage 2 - preparation and issue of a CD.

CFL – Technical Specification

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- **Technical Specifications may be prepared and published when the subject in question is still under development or where for any other reason there is the future but not immediate possibility of an agreement to publish an International Standard,**
- The technical committee or subcommittee may decide, by following the procedures, that the publication of a Technical Specification would be appropriate.

CFL – Technical Specification

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- The reasons for publishing the Technical Specification, and an explanation of its relationship to the expected future International Standard, shall be given, ie
- This document is ... Technical Specification ... as a “prospective standard for provisional application” in the field of ... because there is an urgent need for guidance on how standards in this field should be used to meet an identified need.

CFL – Technical Specification

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- This document is not ... an “International Standard”. It is proposed for provisional application so that information and experience of its use in practice may be gathered...
- A review of this TS will be carried out not later than 3 years after publication with the options of: extension for another 3 years; conversion into an International Standard; or withdrawal.”
- Refer to PRESCO(OM)034c for detailed reasons

LEDs - IEC Standards – update - lamps

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IEC 62663-1 Non-ballasted LED lamps – Safety

- New. At CDV

IEC 62663-2 Non-ballasted LED lamps – Performance

- New. At 2nd CD

IEC 62776 Double-capped LED lamps for general lighting services - Safety specifications (retrofit applications only)

- CDV closed

IEC Standards – TC34 update

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IEC Tc34 has 4 working groups - meet April & Oct.

WG/1 PRESCO - Lamps

WG/2 EPC - Accessories

WG/3 COMEX - Control gear

WG/4 LUMEX - Luminaires

Working Groups refer specific work to specialist/ expert Panels, ie IP, PAP, COMEX, ELP, or to workshops where work is less developed or unknown and have project teams, i.e. CFL tiers, LED reliability, etc, These usually meet in January and June.

IEC Standards – TC34 update

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IEC Tc34 has 4 working groups and now propose 5th.

Two recent issues:

- + Questionnaire – Vice chair.

 - Australia voted No with comment

- + Questionnaire – Formation of TC34E for systems.

 - Australia will again vote no.

Issue. TC34 current operation methods are not clear to IEC CO management and LEDs have focussed attention on need to generate “systems approach”

Current “silo” methods may not be best method.

LEDs - IEC Standards – update - lamps

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IEC/PAS 62717 LED Modules for general lighting - Performance requirements

IEC 62717

- at CD
- Power Quality - Displacement/distortion factors
- Dimming. At *DC*
- Declaration of lifetime values – *LxFy. Agreed consider new proposal for amendment at LED panel meeting in June*

LEDs - IEC Standards - update

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IEC/TS 62504 Edition 2. Definitions for LED and LED modules

- Stability date 2013
- 34/170/CD closed
CC issued

LEDs - IEC Standards – update - lamps

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IEC 62560 Edition 1. Self-ballasted LED-lamps for general lighting services (GLS) >50V - **Safety** specification

- Stability date 2013
- Amendment 1
 - CD (closed 2013-02)
 - Referred to LED panel June 13 Washington to review NC comments

IEC 62838 Edition 1. Self-ballasted LED-lamps for GLS <50V ac or 120V dc – **Safety**

- At CD

LEDs - IEC Standards – update - lamps

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IEC/PAS 62612 Self-ballasted LED-lamps for GLS > 50 V – Performance

IEC 62612

- Edition 1
 - FDIS (closes 2013-05-24)

Amendment 1

- Component reliability
- Stabilisation time (Annex A)
- Extended temperature range
- Regulation of lamps by luminous flux – DC

LEDs - IEC Standards – update - lamps

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IEC/TS 62861 (Technical Specification)

Principal component reliability testing for LED-based products.

Aim - Based on suitable component testing reduce lamp test life duration to 2000 hours.

- **NP closed. Passed 50% vote and has required number of experts. Consider comments at LED June Washington**

IEC also covers OLEDs and Induction lamps, ie

IEC 62868 Organic light emitting diode (OLED) panels for general lighting < 50 V – Safety requirements

- **CD closes 2013-07**

LEDs - IEC Standards – update – control gear

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IEC 61347-2-13 / IEC 62384: Controlgear for LED modules – Safety

- Edition 2
- FDIS next.

IEC 62031 Edition 1.2 LED modules for general lighting - Safety specifications

- Stability date 2015
- Electric strength test - DC issued
- System requirements – DC required for many IEC LED stds
- Water contact – DC issued

LEDs - IEC Standards – update – control gear

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Questions