



Joint CELMA / ELC Guide on LED related standards

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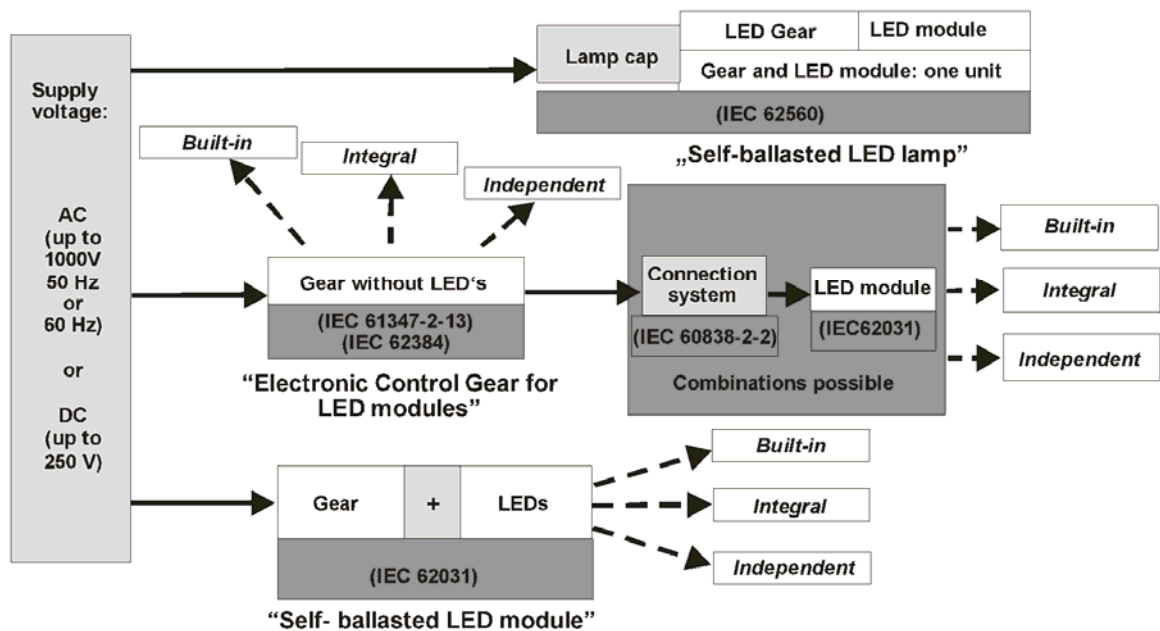
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1. Key Standards – Safety & Performance

Product type	Safety Standard	Performance Standard
LED Drivers	IEC 61347-2-13 Published 2006	IEC 62384 Published 2006
LED Modules	IEC 62031 Edition 1 Publication 2008	Draft Standard expected for April 2010 Public Available Specification (PAS) expected in 2010
LED self ballasted lamps (>50V)	IEC 62560 Edition 1 Publication expected 2010	IEC/PAS 62612 Publicly Available Specification published 2009 Publication of IEC 62612 standard expected 2011
LED luminaires	IEC 60598-1 Edition 7 Publication 2008	IEC/PAS expected in 2010
LED products	IEC TS 62504 Terms and Definitions for LED's and LED modules in general lighting To be published in 2010	

Overview of systems composed of LED modules and control gear



2. Key Standards – Photometric Measurement

EN13032-1, EN 13032-2 and EN 15193

3. Standards related to LED products

IEC TC 34 (Lighting), Split into Sub committees (Lamps, Caps & Control Gear)

CIE Div 2, 2007 Publication CIE127 (Methods of measurement)

CIE Div 6 and IEC TC 76, IEC62471 Photobiological safety / Optical radiation

TABLE 1 list of standards related to LED products

IEC/EN 60598	Luminaire requirements
IEC/EN 62031	LED Modules for General Lighting – Safety Specifications
IEC XXXXX	LED Module for General Lighting - Performance
Pr. IEC 62560	Lamps - Self-ballasted LED-lamps for general lighting services by voltage > 50 V - Safety specifications 34A/1354/CDV
Pr. IEC 62612	Lamps – Self-ballasted LED-lamps for general lighting services >50 V - Performance requirements 34A/1343/CD
Pr. IEC/TR 61341 ed 2	Measurement – Intensity & Angle) – 34A/1340/DTR
Pr. IEC 61231	ILCOS – 34A/1345/CDV
Pr. IEC 62504	LED Terms & Definitions - 34A/1355/DTS
IEC/EN 60061	Lamp Caps and holders
IEC/EN 60838-2-2	Connectors for LED-modules
IEC/EN 61347-1	Lamp control gear - Part 1: General and safety requirements
IEC/EN 61347-2-13	Lamp control gear - Part 2-13: Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules
IEC/EN 62384 + A1	DC or AC supplied electronic control gear for LED modules - Performance requirements
IEC 62386-207	Digital addressable lighting interface - Part 207: Particular requirements for control gears; led modules (device type 6):
IEC/EN 60825-1	Safety of laser products (see Annex A)
IEC/EN 61000-3-2:	EMC - Limits for harmonic current emissions
IEC/EN 61000-3-3:	EMC - Limitation of voltage changes, voltage fluctuations and flicker
IEC/EN 61547:	EMC - Immunity requirements
EN 55015:	EMC - Radio disturbance characteristics
EN 62471: 2008 (IEC 62471:2006 modified) (CIE S 009:2002)	Photobiological safety of lamps and lamp systems (see Annex A to the Guide)
IEC TR 62471-2	Photobiological safety of lamps and lamp systems - Part 2: guidance on manufacturing requirements relating to non-laser optical radiation safety (see Annex A to the Guide)

4. Standards under development

PRESCO

Pr. IEC 62560

Self-ballasted LED-lamps for general lighting services by voltage > 50 V - Safety specifications: doc 34A/1354/CDV

Pr. IEC 62612

Self-ballasted LED-lamps for general lighting services >50 V - Performance requirements: doc 34A/1343/CD

Pr. IEC XXXXX

Non-ballasted single capped LED lamps for general lighting (< 50V) - Safety requirements doc: 34A/1352/NP

Pr. IEC XXXXX

Non-ballasted single capped LED lamps for general lighting (< 50V) – performance requirements: doc 34A/1353/NP

IEC /TR 61341/pr A1

Method of measurement of centre beam intensity and beam angle(s) of reflector lamps– including LED: 34A/1340/DTR

IEC/TS 62504

Terms and definitions for LEDs and LED modules in general lighting: 34A/1355/DTS

Pr. IEC 61231

International lamp coding system (ILCOS): 34A/1345/CDV

COMEX

IEC 61347-2-13/prA1

Marking, revision of output voltage limits: COMEX (NW) 083 A and COMEX (RTK) 087, point 8.

5. Key Regional Standards for the Application of LED Based Luminaires (excluding Emergency Lighting)

EN 12464: Light and lighting - Lighting of work places is published in 2 parts:
Part 1: Indoor work places; Part 2: Outdoor work places

CIBSE Society of Light & Lighting - Code for Lighting 2006

CIBSE Society of Light & Lighting – Lighting Guide 2 - Lighting for Hospitals & Healthcare Buildings

LM-79-08: IES Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products

LM-80-2008: IESNA, Approved Method for Measuring Lumen Maintenance of LED Light Sources