

VS at Light+Building 2008



As a regular exhibitor at Light+Building, Vossloh-Schwabe will again be presenting interesting new products in Frankfurt am Main, Germany from 6th to 11th April 2008 and looks forward to welcoming you at the

VS stand B60 in Hall 4.0

Visitors can look forward to numerous technical innovations and optimisations as well as cost-effective solutions made by VS.

From Idea to Solution

International trade fair visitors can expect to find an extensive selection of new products at the Vossloh-Schwabe stand. These numerous innovations ensure that our customers can put new ideas into practice and with that increase their global competitiveness.

LEDs – Brighter, Lower Energy Consumption, Higher Colour Rendering Index

Our range of LED systems contains many new solutions for visitors to discover: from high-brightness modules, through VS-P3 down- and spotlights with nearly true-to-life colour rendering, right up to flexible LED modules that are four times brighter than conventional LEDs. In addition, we will also be presenting a number of new developments that further validate our leading technological position in the field of LEDs.

Magnetic Ballasts – Traditionally Innovative

Higher in performance, yet smaller in size – those are the main advantages of our latest generation of magnetic ballasts. Trade fair visitors will be able to explore all the possibilities offered by our new ballasts and power units on the VS stand.

Electronic Ballasts – New and Multi-talented

Based on our development work in the field of electronic ballasts, we can now offer smaller devices with even more functions. This opens up a whole host of new application and design possibilities for the luminaire industry.

Lampholders – Modern Materials, New Bases

In the field of lampholders, we will be presenting new developments for mini HID lamps and Greenhouse lighting. The miniaturized and watertight G5 lampholders will be a further highlight at the stand.

Ignitors – Innovative Solutions

As additions to our ignitor range, we will be presenting a new ignitor with integrated power switch, a new power switch for lighting systems without a control line as well as pulse ignitors featuring an automatic cut-out and IPP technology.

Automated Wiring – ALF Compact with Extended Functions

Our new, revised ALF Compact automated wiring system is ready for presentation to the public right on time for Light+Building. The new system generation is characterised by being even more cost-effective and productive. In addition, we have increased machine availability as well as system flexibility to suit the most diverse applications.

With competent staff drawn from more than 30 countries, the VS team will be ready to answer your questions on technological issues, market opportunities and current trends within the lighting sector. At the same time, we will be presenting the new VS Main Product Catalogue, which totals 544 pages.

As you can see, there are many good reasons to visit the Vossloh-Schwabe stand at Light+Building 2008.

We look forward to seeing you.

Welcome to the World's Key Lighting Fair in Frankfurt from 6th to 11th April 2008 in Frankfurt.

Come and see Vossloh-Schwabe at the Light+Building, hall 4.0, stand B 60.

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LED News

New Brightness: VS LED Lighting-Module with Cree XR-E

VS has opted for the latest XR-E LEDs of the US-American manufacturer Cree Inc. for its LED lighting modules. Brightness levels of 100 lm are achieved at only 1.3 W per LED.

In addition, VS offers a narrow brightness and chromaticity location selection both for cool and warm white LED light. Thanks to various control options with VS constant current sources (350, 500, 700 and 1,050 mA), the possibilities for LED lighting applications have become limitless. The modules are of circular or linear design and available in single or triple versions and as a LEDLine version with 12 light points. The integration of various optics rounds off Vossloh-Schwabe's product suite.



VS-P3 Down- and Spotlights: The LED Solution for General Lighting Applications

In cooperation with the Panasonic Electric Works group, the Vossloh-Schwabe subsidiary can now offer an innovative LED technology that guarantees improved light quality with two narrowly defined chromaticity locations (instead of countless colour bins), a high colour rendering index and excellent heat dissipation properties. This technology is available in the form of the new VS-P3 modules, which are marketed in a spotlight version with four LEDs (47mm diameter) and a downlight version with 8 LEDs (59mm diameter).



Typical areas of use include general lighting applications like reading and desk lights or ceiling-recessed fixtures. In addition, this product range is highly suitable in areas that demand a high colour rendering index like shop lighting or illumination for objets d'art. VS-P3 modules moreover provide the following additionally optimised properties:

- no colour binnings
- 40,000-hour service life
- very high colour rendering index of $R_a = 90$
- highly homogeneous light spot
- low energy consumption (8W/16W)
- very efficient high brightness
- new compact, flat design



Four Times Brighter: LEDLine Flex High Brightness

The product family of the well-known LEDLine Flex SMD modules has now been extended by a High Brightness model. Equipped with LEDs with a power uptake of 0.5 W, this flexible module is available in white, warm white, red, green and blue. With a lumen output for White of up to 540 lm/m, it is four times as bright as the conventional version.

With a maximum operating length of 5 m, this module is the longest on the market within its output class. The LEDLine Flex SMD High Brightness module can, for instance, be used for furniture and architectural as well as for entertainment and shop lighting.



Bright Lights for Display Cases: SpotLight 12 V

The 12 V SpotLight is an optimised product that is currently being developed for display case lighting and is specifically designed to provide a replacement for low-voltage white halogen luminaires. The integrated constant current control enables direct connection to 12 V DC and AC voltage sources. Provided the minimum load is observed, electronic AC voltage converters are also suitable for the SpotLight model.



Contacts are effected using two pins designed for use with GX5.3 lampholders. Typical applications include installation in luminaires, furniture lighting as well as shop and display case lighting.

Life in Full Colour: LEDLine RGB Push



The LEDLine RGB Push is particularly suitable for installation in furniture to provide simple colour accents. The LEDLine RGB Push module is an RGB module with an integrated on-board colour control unit that removes the need to use an external colour control module. The micro-controller stores a pre-programmed colour sequence. By connecting a conventional push-button, the colour sequence can be started and paused and the speed of the colour sequence can be adjusted. The master circuit board can be connected to a maximum of two slaves which replicate the master colour sequence.

Simply Better: High-Power 24 V RGB/CA System

The new High-Power 24 V RGB/CA system enables modular and highly flexible LED systems. The new system responds to the trend towards market harmonisation and simplification of LED control technology. The modules require a 24 V DC operating voltage. Constant current control is effected via the circuit board and permits currents of up to 500 mA per LED. The modules are connected via an on-board push-in connector with matching connection cables. The RGB system is based on the common anode system, which enables mixed operation of high-power RGB modules and low-power modules that are designed according to the common anode principle. The high currents of high-performance LEDs used in the system result in brightness levels of up to 390 lm during RGB operation. Typical application areas for the High-Power 24 V RGB/CA system include:

- general lighting
- installation in luminaires
- architectural lighting
- lighting for art
- entertainment
- shop lighting

ALF News

Greater Versatility, Greater Availability: The New ALF Compact

VS is presenting its newly revised ALF Compact wiring system right on time for Light+Building. The system is currently in use at 40 different locations around the world and has been continually developed since its initial launch 15 years ago. Many important details of this latest generation of the ALF Compact system have now been improved to suit growing market demands.

Extended Testing System

The testing system was completely revised with regard to its compliance with future safety requirements and corresponds to the high testing requirements of modern-day luminaires. As a result of this revision, it is now possible to test luminaires with an emergency lighting function. In addition, the range of testable and dimmable luminaires was considerably extended. In its standard version, the system is capable of testing analogue and PUSH-dimmed luminaires. The system can be adapted to suit DALI luminaires on request.

PC Software

The VS software for programming the automated wiring system requires no special hardware. The next luminaire batch can already be programmed using the simple and convenient GUI on a conventional PC without interrupting the production process.

Optimised Mechanics

To extend the high degree of machine availability yet further, many of the mechanical components were replaced with new developments. A key example of this is the replacement of the vacuum pump by a Festo ejector module, which requires no mechanical parts. In addition to this, the electrical control cabinet and the testing system are kept cool and free of dust by an automated Riital climate control system. The camera for the automatic tolerance compensation function has been replaced with a new Firewire development and the necessary lighting is now provided by efficient and robust LED elements.

Intensified Service

Service support has also been substantially improved in the field of remote diagnostics and maintenance. Depending on the respective customer's IT environment, connections can be effected using conventional or ISDN telephone lines or the internet. The customer can choose from a variety of different maintenance programs.



Electronic News

DALI for Low Voltage Applications

VS is rounding off its range of electronic transformers for low-voltage halogen lamps with a DALI interface and an output range of 70 VA, 105 VA and 150 VA. Failsafe and precise control via the DALI interface, error feedback, programmable operating parameters in DALI mode and an extended dimmer range of 1 to 100% are characteristic features of this new transformer generation.

Mood Lighting: Dimmable Electronic Ballasts

Thanks to Vossloh-Schwabe's range of dimmable electronic ballasts, even fluorescent lamps can now be used to create special and pleasant mood lighting effects.

At the beginning of the year, VS extended its product family of 1- and 2-lamp analogue and digitally dimmable EBs for T5 and T8 lamps by introducing a completely new range of electronic ballasts for 3- and/or 4-lamp operation of 14/24 W T5 lamps and 18 W T8 lamps. Offered in a flat metal casing and providing the known merits of the DALI/PUSH interface, Vossloh-Schwabe's new electronic ballast additionally enables lamp ignition within 0.5 seconds. The dimmer range is from 1 to 100%.



- flat device design
- dimmer range from 1 to 100%
- IDC/Push-in terminal
- lamp is automatically switched off at the end of its service life in accordance with EN 61347-2-3 (EOL-Test 2)

Packing a Punch: Compact Electronic Ballasts

Without these devices, many of the advantages associated with compact fluorescent lamps would be lost. VS has developed a new series of compact electronic ballasts for conventional downlights using 1- or 2-lamp, 13 to 42 W TC-TEL/DEL lamps. The advantages include:



- compact K2 design
- available as built-in and independent devices (with strain relief)
- EB suitable for 1- and 2-lamp operation
- constant power uptake
- wiring advantages due to an additional earth terminal and
- suitability for Protection Class I and II (EMC) luminaires

Dimmable Compact Electronic Ballasts

Vossloh-Schwabe's device range for compact fluorescent lamps has now been extended by a new generation of dimmable compact electronic ballasts. These analogue and digital devices were designed for ratings of 18 to 57 W. The additionally available strain relief makes the devices suitable for independent operation.



- new DALI/PUSH series in a compact casing (K3.1)
- lamp is automatically switched off at the end of its service life in accordance with EN 61347-2-3 (EOL-Test 2)
- lamp monitor
- only two device types for the same output range
- suitable for operation with amalgam lamps
- also suitable for operation with 22 and 40 W T5 circular lamps

Ideal Combination: Compact Electronic Ballasts for New 14 and 17 W Compact Fluorescent Lamps

Compact device design facilitates equally compact luminaire design. In comparison to operating 18 or 26 W TC-DEL/TEL lamps with electromagnetic ballasts, the new lamp-ballast system results in energy savings of up to 50%. A 25% energy saving can still be achieved by using an electronic ballast to operate the old lamp types. Further advantages:

- multi-lamp ballast for compact fluorescent lamps with a GR14q base (1x and 2x 14 W as well as 1x and 2x 17 W)
- wiring advantages due to an additional earth terminal and
- suitable for Protection Class I and II (EMC) luminaires

Slim Luminaire Design with Miniaturised HID Ballasts

The fact that the new ballasts are up to 50% smaller than before makes for elegant luminaire designs. In addition, the new devices achieve energy savings of up to 70% in comparison to conventional halogen systems. They are available as built-in and independent versions (with strain relief) for lamps with a GU6.5 or a PGJ5 base.



- no flickering at the end of a lamp's service life
- total digital lamp-monitoring function to ensure constant lamp output during operation – irrespective of the age of the lamp or a drop in voltage
- resonance ignition concept
- quick lamp ignition through intelligent ignition monitoring
- no power factor correction

A New Era for 150 W HI Lamps: Compact Electronic Ballasts

Vossloh-Schwabe's new range of compact electronic ballasts come with a pulse ignitor and a new, smaller design in a K31 casing (previously K32). Thanks to the encapsulated components, these devices guarantee improved thermal properties for installation in luminaires. Further advantages include:

- no flickering at the end of a lamp's service life
- total digital lamp-monitoring function to ensure constant lamp output during operation – irrespective of the age of the lamp or a drop in voltage
- quick lamp ignition through intelligent ignition monitoring
- extended protection of the ballast during non-specified operation (e.g. in extremely high ambient temperatures) by regulating the lamp output in relation to the rise in temperature and a by reversibly switching the device off

Dual-Channel Light: New Compact Electronic Ballasts for HI Lamps (2x35 W)

Two independent ignition channels as well as a total digital lamp-monitoring function to ensure constant lamp output are among the highlights of the new compact electronic ballasts. The digital monitoring function is active during operation, regardless of the age of the lamp or a drop in voltage. The compact device enables independent lamp operation. Further features include:



- pulse ignition
- compact design in a K31 casing (previously K32)
- quick lamp ignition due to intelligent ignition monitoring
- temperature protection (in the event of overheating, the respective lamp will be switched off; once it has cooled down, the lamp is automatically re-ignited)

Electronic HID Ballasts for the US Market

VS is extending its range of electronic ballasts by introducing several new HID ballasts for the US market. These ballasts supplement the Micro and Mini-Slim lines and are available in the most popular wattages used in the retail industry, 39 and 70 W.



Characterised by its small dimensions and low weight, the 39 W Micro line is ideal for use with small track head luminaires and floodlight cylinders. A ballast with an ignition voltage of 1.8 kV was especially engineered for use with Philips' lamps with a PGJ5 base.

The new Mini-Slim devices are suitable for 39 or 70 W operation and were designed for use in 277 V bus-controlled applications and downlights. Mini-Slim EBs are available with feet or studs for mounting.



Lampholder News

VS Innovations: Lampholders

Vossloh-Schwabe presents numerous new lampholders to coincide with Light+Building. All of these impressive innovations resulted from combining both tried-and-tested and new technologies. VS is confident that these new product lines will prove to be a huge success. The following provides an overview of all new products:

GX8.5 Lampholders

The replacement of conventional halogen lamps with discharge lamps is a current trend within the lighting industry. For instance, reflector lamps with a GX8.5 base are an alternative to halogen lamps with a G53 base. In response to this trend, Vossloh-Schwabe is presenting the new 346 series of GX8.5 bases in two versions: type 34600 with mounting holes for M3 screws and type 34601 with M3 screw sockets for rear screw mounting. A separate cap protects against accidental touch also serves as cord grip.



PGJ5 Lampholders

The PGJ5 lampholder is the perfect solution for luminaire manufacturers that attach importance to compact lampholder-lamp designs. The new PGJ5 lampholder is suitable for the new CDM-TM discharge lamp from Philips, which is an ideal replacement for low-voltage halogen lamps with a GY6.35 base.



GU6.5 Lampholders

The GU6.5 lampholder series completes VS' product range in the field of lampholders for the new generation of miniature discharge lamps. Up to now, the range included the G8.5, GX8.5 and PGJ5 series. The size of the lampholders has been adapted to suit the concept of the lamps, which is to provide compact and far more efficient discharge lamps as a substitute for halogen applications. The new GU6.5 lampholder was developed for use with both Osram Powerball HCTF and GE CMH Supermini lamps.



Interchangeable PGJ5 and GU6.5 Lampholders

Interchangeable versions of PGJ5 and GU6.5 lampholders make it possible to swap from one product to another and yet keep the same mounting dimensions and light source height. This ensures that luminaire manufacturers can make flexible use of both technologies within a single luminaire design.



GY9.5 Lampholders

This lampholder was specifically designed for discharge lamps used in tanning beds or photographic applications. Thanks to its ceramic base, the lampholder is highly heat resistant and a plastic cover ensures it's very lightweight. The lampholder is available with two different covers that produce different lamp axis heights and so offer luminaire manufacturers numerous design possibilities.



New G5 Lampholders 09420/21/22/23 for Automated Wiring (ALF)

In combination with our ALF wiring system, the new, miniaturized G5 lampholder provides a far quicker and with that more cost-effective alternative for wiring complete luminaire systems. Coupled with different lamp axis heights, the user-friendly and convenient ALF software enables countless individual designs.



G5 Lampholders of Protection Class IP65/67

With these new, watertight systems, VS provides lampholders whose small dimensions are ideal for T5 lamps and their compact size enables numerous new luminaire designs. Three different snap-in feet are available for use with metal (13.3x25.5mm and 17.6x25.5mm) and plastic (17.6x25.5mm) luminaire casings. As these lampholders feature slot insertion instead of a rotor insert, so lamps cannot be twisted out of alignment while tightening the screw ring, which makes installation much easier. The silicone gasket of the screw ring is a one-piece solution and ensures a tight lamp seal.

K12x30s Lampholders

VS presents a new K12x30s lampholder for the Philips greenhouse lamp MasterGreen Power TD 1000W/400V EL. The lampholder is made of LCP, classified as T150 and is suitable for Protection Class II luminaires. The lamp is pre-positioned upon insertion in the VS lampholder and then locked in place with a slider, which ensures the lamp is securely seated and can be safely connected. A protective switch disconnects the lampholder from the mains to permit lamp safe replacement.



Ignitor News

Integrated Solution: Ignition Unit with Power Reduction

Being both quick and simple to wire, Vossloh-Schwabe's new ignition unit is characterised by lower installation costs and greater ease of use. Available with various outputs up to 150 W, the ignitor can reduce HS lamp output without requiring a separate power reduction switch.



In combination with a suitable ballast and a control phase, it is therefore possible to achieve significant energy savings in the field of street lighting. The highly compact unit provides the added advantage of taking up only very little space inside the luminaire.

Smart Savings: Power Reduction Function for Lighting Systems without a Control Line

This extremely user-friendly innovation makes it possible to switch between various pre-programmed switching times, which can be set between 3 and 6 hours. The luminaire will be stepped down from nominal output operation to reduced power operation at these intervals. This energy saving is achieved with the help of suitable VS ballasts that can switch between two outputs. In addition to this, it is equally possible to switch the lamp back to nominal output operation from reduced operation at the end of service. A further highlight is a test function which permits the performance of the power reduction switch to be tested during luminaire production.



Bright Spark: Pulse Ignitors with Automatic Cut-out and IPP Technology

Intelligent pulse pause (IPP) technology already features in a wide variety of Vossloh-Schwabe's technical solutions. Thanks to its integrated micro-controller, the PZ 1000KD20 ignitor provides an extended set of functions for a very wide field of application. In combination with a matching ballast, the pulse ignitor is therefore ideal for use with 50–1000 W HS lamps, 35–1000 W HI lamps and 35–400 W C-HI lamps. Cable lengths of up to 10 m, and in exceptional cases even 20 m, between the ignitor and the high-pressure discharge lamp are possible.



Magnetic News

Extending Vossloh-Schwabe's Leading Position: New 35–150 W Power Unit for C-HI and HS Lamps

Vossloh-Schwabe is one of the most successful manufacturers of magnetic power units worldwide. More than two million units of the current design have already been sold in the last three years. In order to strengthen and further expand its leading market position, VS has developed a completely new unit. In comparison to the current version, the new device features the following properties:

- a more compact design (dimensionally smaller than many electronic HI ballasts)
- more sophisticated technical features (voltage guard and IPP+ technology) and
- an innovative solution with an integrated GST push-in connector



The new power unit also includes a new ignition concept. The ignitor's range of functions was extended on the basis of the IPP+ technology that is already in use. In addition to the known function of monitoring the temperature switch, the device now also provides protection against mistakes during installation or mounting as well as against neutral conductor interruptions. This was realised with the help of a "voltage guard", which prevents the lamp from starting up at 380V.

Visible Safety: Counterfeit Protection for Magnetic Ballasts MADE IN GERMANY

To protect VS' high-quality products from brand piracy, each magnetic HID operating device will from now on be protected with a HOLOSPOT chip.

Each of these individual chips is linked to the product and Vossloh-Schwabe's production code. In addition, the chip contains visible and invisible data, some of which can only be read using a special scanner. This chip is designed to reliably protect Vossloh-Schwabe HID components against counterfeiting and will make a decisive contribution towards ensuring "MADE IN GERMANY" remains a synonym for reliable quality.



New Compact Design: 250 and 400 W Ballasts for HS, HI and HM Discharge Lamps

Vossloh-Schwabe always delivers exceptional results – and that includes device design. Thanks to the new 71 x 75 mm dimensions, very compact devices can now be made available, especially with a view to applications involving HS, HI and HM lamps with ratings between 250 and 400 W.

These new devices increase Vossloh-Schwabe's product flexibility for the most diverse of designs.



Blinded By The Light: New Ballasts for HS, HI and HM Lamps

To offer its customers a full range of "MADE IN GERMANY" HID components, VS has now developed a complete new range of 1000 W devices manufactured at the state-of-the-art, fully automated VS plant in Germany. Thanks to the compact design and efficient technology, these ballasts are a force to be reckoned with on the market. VS provides a full range of products for all lamps and voltages.



Economically Attractive: New Type B Capacitors

Vossloh-Schwabe very successfully integrated capacitors into its product range a number of years ago. Now, VS is presenting a new series of Type B capacitors with the following outstanding features:

- compact design
- competitive price
- 250 V capacitors with a standard temperature range up to 100°C
- MADE IN EUROPE and
- ENEC approval



Bestseller Reprint: VS' Main Product Catalogue

Thanks to perfect timing, Vossloh-Schwabe's new Main Product Catalogue will be published just in time for Light+Building, the most important trade forum for the international lighting industry.

Containing all the products and key technical information over a total of 544 clearly structured pages, the new catalogue will give trade fair visitors a real heavyweight to take home with them.

All additions to VS' product range naturally also feature in the catalogue and are marked "New" for easy identification.

Vossloh-Schwabe's Main Product Catalogue is sent out to customers as a matter of course. However, if you have not yet received yours or require further copies, please contact your Vossloh-Schwabe representative.



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Standards

Information on the Standardisation of Control Gear used in General Lighting

The IEC (International Electrotechnical Commission) is responsible for electro-technical standardisation. Lamps and lamp-holders as well as control gear for lamps and luminaires are under the scope of IEC TC 34 (technical committee and its subcommittees SC 34A, B, C and D). The Comité International Spécial des Perturbations Radio-électriques (CISPR) is responsible for standardising the electromagnetic compatibility of luminaires and luminaire accessories.

The European standards published by CENELEC (Comité Européen de Normalisation Electrotechnique) are applicable within the EU economic region. IEC standards are normally taken over as European standards.

The IEC SC 34C COMEX working group (Components Experts) is responsible for all control gear for lamps: magnetic and electronic ballasts for fluorescent and high-pressure lamps, starters and ignitors, electronic converters and transformers for low-voltage halogen lamps, ballasts for neon tubes and compensation capacitors.

The standards governing control gear are divided into a basic part for safety (IEC 61347-1) as well as sub-parts (IEC 61347-2-xx) for the various types of control gear. The requirements governing performance are laid down in separate parts (e.g. IEC 60921, IEC 60923, etc.). The standards for compensation capacitors have remained split between IEC 61048 for safety and IEC 61049 for performance. A number of changes will be effected with regard to DC-powered control gear in the foreseeable future. Centrally- and battery-powered devices (emergency lighting) will each be governed by separate parts. The parts responsible for special DC applications (IEC 61347-2-4, IEC 61347-2-5 and IEC 61347-2-6) and the part governing performance (IEC 60925) will become invalid. For emergency lighting systems, the performance requirements are included in the safety standard.

The following table provides an overview of the structure of the standards for lamp control gear.

An independent family of standards (IEC 62386) will soon be published to govern the lighting interface for dimming and control (Digital Addressable Lighting Interface – DALI). (A division into a basic part and separate parts for the various types of control gear has also been undertaken.)

Structure of IEC 62386 "Digital Addressable Lighting Interface"

Parts 10X: General Requirements

- 101: System
- 102: Control Gear
- 103: Control Devices

Parts 2XX: Particular Requirements for Control Gear

- 201: Fluorescent Lamps
- 202: Self-contained Emergency Lighting
- 203: Discharge Lamps (excluding fluorescent lamps)
- 204: Low-voltage Halogen Lamps
- 205: Supply Voltage Controller for Incandescent Lamps
- 206: Conversion from Digital Signal into D.C. Voltage
- 207: LED Modules
- 208: Switching Function
- 209: Colour Control
- 210: Sequencer
- 211: Optical Control

Parts 3XX: Particular Requirements for Control Devices

- 301: System Description Language

Energy consumption requirements are increasingly gaining importance around the world. For that reason, the IEC SC 34 C committee has embarked on a project to standardise the method used to measure the input power of fluorescent lamp circuits (EN 60294 is currently valid in Europe) within the IEC 62442 family of standards.

IEC 62442 "Energy efficiency of electrical lighting equipment"

- IEC 62442-1
Energy efficiency of electrical lighting equipment – Ballasts for fluorescent lamps – Part 1: Method of measurement to determine energy consumption of ballast/lamp circuits
- IEC 62442-2
Lamp control gear – Part 2: Ballasts for fluorescent lamps – Performance requirements – Energy labelling and minimum energy performance standards requirements

Special Topics regarding the Electrotechnical Standardisation of Control Gear:

- The inclusion of a stricter "endurance" test for electronic control gear for fluorescent lamps is under discussion.
- Digital Addressable Lighting Interface (DALI).
- The first step of standardising control gear for LED modules with separate parts to govern safety and performance has been completed. The safety standard was published with IEC 61347-2-13 and the performance standard with IEC 62384.
- The introduction of special test circuits regarding the end-of-life effects of fluorescent lamps will make electronic control gear even safer and will prevent critical lamp transition states via a function to safely switch lamps off. Consideration is being given to narrowing the tolerances for selecting lamps at the end of their service life and an extension of the test circuits to assess T8, T10 and T12 lamps.
- Foiles used in magnetic ballasts as insulation between the copper winding and the iron core will be required to undergo a special test to ensure a minimum degree of material strength.
- Clarification has been supplied regarding through wiring (routing mains power to other devices) when using independent control gear.
- The provision of a clear and uniform specification is designed to simplify the definition of earthing luminaires and control gear. In future, the "protective earth" and "functional earth" symbols will be the only ones in use. The protective earth stands for Protection Class I earth systems and the functional earth will be used in all areas that demand an earth connection for functional reasons (e.g. EMC or start assistance for lamps).

As functional earth connections can also be used in Protection Class II luminaires, it is important to take account of the consequences. If control gear with a protective earth symbol (which merely consists of an insulation barrier to the protective earth terminal) needs to be installed, the luminaire design must also satisfy the requirements regarding double or reinforced insulation for the functional earth terminal.

When using electronic control gear with a functional earth symbol there is no need to observe any special requirements for connecting the functional earth as the requirements regarding double or reinforced insulation to the connection terminal are satisfied within the control gear.

- Uniform test circuits and requirements for all lamp types within a dimmer range of 10–100% of the lamp output are in preparation for the requirements governing electronic control gear for dimming fluorescent lamps.
- The reorganisation of the requirements governing electronic control gear for emergency lighting has begun.
- Elaboration of a worldwide standard for measuring the energy consumption of fluorescent lamp circuits.
- The CDN method for assessing EMC of luminaires and luminaire accessories when using electronic control gear in the frequency range of 30–300 MHz is valid.
- The draft of a product family standard has been published with regard to EMF testing, i.e. electromagnetic fields sent out by luminaires. The standard is expected to be adopted in 2009.

Special Topics of the European Directives for Control Gear and Luminaires:

- **2006/95/EG Low-Voltage Directive**
Modification of the low-voltage directive (73/23/EEC). Compliance with the requirements of the low-voltage directive must be proved by product conformity declarations (integral part of the CE mark).
- **2000/55/EC Maximum Energy Consumption Levels for Fluorescent Lamp Circuits**
Ballasts may now only bear the CE mark if they at least comply with the EEI=B1 or EEI=B2 CELMA energy classes. (Devices allocated to energy classes C and D no longer bear the CE mark.) Ballasts that are CE-marked can be used in luminaires destined for the EU market by luminaire manufacturers. At the present time, this directive is a part of directive 2005/32/EC.
- **2002/91/EC Energy Performance of Buildings**
Regulations regarding the energy consumption designations of buildings (new and refurbished) with a floor space in excess of 1,000 m² have been laid down. The provisions state that the building's future energy consumption already has to be calculated during the planning phase and forms a part of the building permit. The calculation methods are based on the so-called reference method, in which values are determined that must not be exceeded. With regard to dimmable systems with daylight sensors and motion detectors, reduction factors are applied to the calculation of power uptake. The directive has already been implemented in the Energy Efficiency Directive (EnEV); the German preliminary standard DIN V 18599 is to be used for calculation purposes.
- **2002/95/EC Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Devices**
Since 1.7.2006 electrical and electronic devices (and with that luminaires) have only been permitted entry to the EU market if they comply with the stipulated maximum values for certain substances (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls [PBB] – all at 0.1% – and polybrominated diphenyl ethers [PBDE] – at 0.01%).
- **2002/91/EC Waste Electrical and Electronic Appliances**
The decisive provision of the German Electrical and Electronic Equipment Act (ElektroG) is the duty of the manufacturer to take back waste electrical appliances (luminaires). In Germany, ZVEI (the German Central Federation for the Electrical and Electronic Industry) and Interseroh (a company specialised in recycling systems) jointly elaborated a system for taking back such appliances which satisfies the provisions of the law in both a simple manner and at reasonable cost.
- **2004/108/EC EMC Directive (Revision of 89/336/EEC)**
Supersedes the old 1989 directive. Application of the new directive was not permitted prior to 20.07.2007, but must be effected after 20.07.2009.
- **2005/32/EC Framework Directive for Setting Ecodesign Requirements for Energy-Using Products**
The framework directive will comprise implementation regulations with provisions regarding environmental and energy requirements. Going by current considerations, the lighting industry can expect three new implementation directives. In accordance with these, there will be special requirements for street, office and home lighting.

Omnibus System with Parts for Performance

	Safety	Performance
General and Safety Requirements	61347-1	-
Starting Devices	61347-2-1	60927
D.C. or A.C. Step-Down Converters	61347-2-2	61047
A.C. Electronic Ballasts for Fluorescent Lamps	61347-2-3 (with Annex J for centrally-powered DC systems)	60929
D.C. Electronic Ballasts for General Lighting	61347-2-4 (cancelled)	60925 § 2 (cancelled)
D.C. Electronic Ballasts for Public Transport Lighting	61347-2-5 (cancelled)	60925 § 3 (cancelled)
D.C. Electronic Ballasts for Aircraft Lighting	61347-2-6 (cancelled)	60925 § 4 (cancelled)
D.C. Electronic Ballasts for Emergency Lighting	61347-2-7 (only for individual battery systems in future)	60925 (cancelled)
Magnetic Ballasts for Fluorescent Lamps	61347-2-8	60921
Magnetic Ballasts for Discharge Lamps	61347-2-9	60923
Electronic Ballasts for Neon Tubes	61347-2-10	-
Miscellaneous Electronic	61347-2-11	-
A.C. Electronic Ballasts for Discharge Lamps	61347-2-12	-
Control Gears for LED Modules	61347-2-13	62384
Capacitors for Fluorescent and Discharge Lamps	60048	60049