

# Indoor and Outdoor Lighting

as of 2010

SEE THE WORLD IN A NEW LIGHT



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For more information on our products go to:

**[www.osram.de](http://www.osram.de)**

**[www.osram.com](http://www.osram.com)**



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Glossary of lighting terms, product names and product references, ILCOS, general information, symbols 12.00 – 12.31



# Light is life.

Light is an essential part of our everyday lives. As one of the two leading lighting manufacturers in the world OSRAM offers its customers a broad spectrum of innovative lamps and lighting systems for an extremely wide range of applications in offices and factories, on the roads and in homes. OSRAM therefore provides the basis for living independent of natural daylight, with greater safety and comfort.

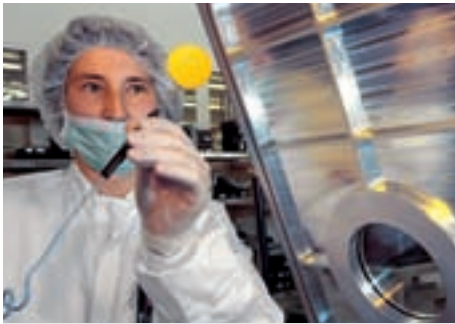


**A bright life on the high seas:** The AIDAdiva cruise ship – seen here in Hamburg harbor on its maiden voyage – boasts seven restaurants and eleven bars, high-end entertainment, a wellness center and various sports facilities. On board AIDAdiva – one of the most efficient lighting management systems in the world.



### **OSRAM – a passion for intelligent light.**

A strategy of constant innovation is the key to our success. We therefore run three research centers in the USA, Germany and China. In the 2009 fiscal year we invested around 6% of our turnover in research and development. Our global innovation management team systematically evaluates ideas for new products with enhanced customer benefits. Product development takes place close to our production sites and in close contact with customers in all the regions of the world. Two major trends on the lighting market, namely energy efficiency and solid state lighting, are really important for us. And in every sphere we aim to provide our customers with the best possible product for their particular application.



*Constant research is the key: Major advances in pioneering thin-film technology have produced a quantum leap in the efficiency of OSRAM LEDs.*

### **OSRAM – your competent and reliable partner.**

Rapid advances in lighting technology have meant that our product range has been continually expanding. To ensure that your know-how as a lighting consultant is always up-to-date we can provide you with first-class support in the form of information on the latest developments and workshops to improve your expertise. Our highly developed order processing system is the basis for a reliable delivery service – in around 150 countries throughout the world.



*The Palau de Les Arts in Valencia – one of the largest opera houses in the world. The lighting director opted for OSRAM QTl DALI control gear for its outstanding performance.*

### **OSRAM – setting new standards in the quality of light.**

One of our guiding principles is to supply lighting of the highest quality. And to meet this objective our Total Quality Management team defines the quality standards that have to be met throughout the world for products, parts and components, and also the requirements for optimizing and rationalizing our processes. This is confirmed by our management system which has been certified to ISO 9001, TS 16949 and ISO 14001.

### **OSRAM – an attractive employer all over the world.**

We offer our employees highly attractive work involving exciting products. We make use of flat hierarchies and uncomplicated contact between all levels from top management to shop floor. Our company spans the globe, so we live and breathe globalization each and every day. If as a German you want to forge a career abroad, or if as a non-German you want to further your career in Germany, all doors are open at OSRAM.

# A world fit to live in – today and tomorrow.

The consequences of global warming are already evident. The polar ice caps and glaciers are melting, sea levels are rising and deserts are expanding. The problem lies with increasing CO<sub>2</sub> emissions throughout the world. As a globally active company we are aware of our enormous responsibility toward people and their environment. This is why sustainability is the basic principle behind all OSRAM's actions. We are careful with natural resources, avoid waste wherever possible, and help reduce the greenhouse effect by developing energy-saving lamps and systems.



## **Efficient products.**

Our energy-efficient products are helping to restore the balance. By using OSRAM energy-saving lamps for example it is possible to reduce power consumption for lighting by up to 80 %. At the same time, because of its long life a single compact fluorescent lamp replaces up to 20 ordinary light bulbs. OSRAM energy-saving lamps therefore not only lead to a considerable reduction in CO<sub>2</sub> emissions they help avoid waste and cut down on purchase costs and electricity costs. Innovative IRC technology is providing impressive savings in halogen lamps. And OSRAM HALOGEN ECO lamps are

simple direct replacements for conventional incandescent lamps.

## **Economical systems.**

To make lighting even more efficient we are focusing more and more on developing perfectly matched systems comprising lamps, electronic control gear and lighting management modules. Electronic operation not only ensures long life but also interference-free energy-saving operation and high-quality light. In this way, the enormous potential of our innovative lamps can be fully exploited.



**Extensive recycling, real sustainability.**

Even when they come to the end of their lives, the almost completely recyclable OSRAM lamps provide valuable raw materials. We make use of eco-friendly waste disposal systems and closed material cycles; the recycled materials are then used as far as possible for manufacturing new products. Our packaging is generally made of recycled paper, and in the OEM sector we mainly use multi-use packaging. For OSRAM, sustainability is more than a buzz word.

**Clear labeling, clear statement.**

We label products that are particularly energy-efficient with the symbol of a green tree. These climate-protection products are part of our Global Care Program, to which we have made the following commitment:

**As a globally active company we act responsibly towards society and the environment, meet global challenges with sustainable products and pioneering processes and therefore make a contribution to maintaining the environment for the benefit of future generations.**

With products from the OSRAM Global Care Program you too can make a significant contribution to climate protection and boost your reputation for eco-friendliness.

**Sustainable projects:**

In addition to the first “Clean Development Mechanism” (CDM) project for reducing CO<sub>2</sub> emissions in developing and emerging countries, OSRAM has launched a unique project on Lake Victoria in Kenya for producing light away from a permanent power supply. At a specially constructed solar station the local inhabitants and fishermen can recharge batteries for energy-saving lamps, luminaires and other electrical appliances at low cost and without damaging the environment.



# Energy-saving alternatives to standard products

On the basis of the climate protection objectives laid down in Kyoto in 1997 the EU defined a series of measures relating to the economical and sustainable use of natural resources. Following the ban on conventional control gear embodied in directive 2000/55/EC, the reduction of hazardous substances in line with directive 2002/95/EC (RoHS) and the directive for the disposal of waste electrical and electronic equipment 2002/96/EC (WEEE), the EU issued directive 2005/32/EC to define the design requirements (Ecodesign) that energy-using products (EuP) have to meet in terms of their environmental impact. This directive was superseded in November 2009 by the more extensive 2009/125/EC directive relating to the eco-design of energy-relevant products (ErP), but this does not have any additional consequences for the lighting industry.





In March 2009 the EU Commission issued two regulations known as "implementation measures" on the basis of Article 15 of the EuP directive. These regulations impose specific requirements for sections of the electrical lighting market. Regulation EC 244/2009 (amended by regulation EC 859/2009) defines requirements relating to the eco-design of non-directional household lamps. This EC 244/2009 regulation covers the technologies that are generally used in the residential sector, namely incandescent lamps, halogen lamps, compact fluorescent lamps with integrated control gear, and LED retrofits. By contrast, regulation EC 245/2009 defines requirements for the eco-design of products used mainly in street, industry and office lighting, namely fluorescent lamps, compact fluorescent lamps with plug bases, high-intensity discharge lamps with E27, E40 and PGZ12 bases, and control gear and luminaires for fluorescent lamps and high-intensity discharge lamps.

The obvious consequence of the two implementation measures has been the phase-out of various types of lamp, which started on September 1, 2009. Under the provisions of EC 244/2009, incandescent lamps (with the exception of lamps for defined special applications) will be phased out completely by 2012<sup>1)</sup>. Halogen lamps and compact fluorescent lamps with integrated control gear must also meet defined minimum requirements if they are to be marketed in the EU. The criteria used to assess the lamps include efficiency, lamp life and lumen maintenance.

Compliance with the implementation measures of the Ecodesign directive will be indicated by the CE symbol. This means that in future the CE symbol will no longer stand only for compliance with safety regulations but also for compliance with the quality requirements defined in the Ecodesign implementation measures.

Another requirement of EC 245/2009 and EC 244/2009 is the obligation to publish particular product information from April or September 2010. This information must be shown on the packaging and/or published on the internet, depending on which of the two implementation measures applies to the product. This information includes for example the mercury content of the lamp and details of lumen maintenance. The implementation measures already define products that will be phased out by 2016 (EC 244/2009) and 2017 (EC 245/2009). Both EU regulations will be subjected

to a review by 2014 at the latest, which is standard practice for such regulations.

At present the EU Commission is working on a further implementation measure for household lighting which will define the eco-design requirements of household lamps with directional light and all household luminaires. This regulation is expected to be issued at the end of 2010/start of 2011.

The following pages show the impact of the implementation measures on OSRAM's product range. In view of the ongoing change procedure for the products affected by EC 245/2009, there may be further changes.
















Irrespective of the statutory requirements, OSRAM is committed to sustainability and therefore already offers energy-saving alternatives to its standard products. The ECO versions of the line-voltage halogen products HALOPIN and HALOLINE already meet the energy efficiency requirements of the regulation, whereas the standard versions will have to be gradually removed from the market. As things stand at present, after 2016 these Energy Class C products may continue to be marketed because of the exemption for G9 and R7s bases.

In addition to direct replacement of high-pressure sodium lamps for which only an adequate ignition voltage needs to be tested OSRAM offers further energy-efficient solutions with the transition to metal halide lamps with ceramic burners. In these cases, it may be necessary to change the control gear. With regard to T12 fluorescent lamps, OSRAM goes beyond the requirements of the regulation and will be removing these products from the market in 2010 – two years before the official deadline. Control gear from OSRAM already meets the efficiency requirements of tomorrow. For example, it already meets the threshold values for standby losses that need to be met by 2012.



















For the latest information on the products affected and the energy-efficient alternatives available go to our website at [www.osram.com](http://www.osram.com).

1) Further information at [www.elcted.org/documents/Special%20Purpose%20Lamps\\_090515.pdf](http://www.elcted.org/documents/Special%20Purpose%20Lamps_090515.pdf)

## Implementation measure for non-directional household lighting

		Sep. 2009	Sep. 2010	Sep. 2011	Sep. 2012	Sep. 2013	Sep. 2014	Sep. 2015	Sep. 2016	
	Incandescent lamp, clear lamps	15 W 25 W 40 W 60 W 75 W > 100 W	15 W 25 W 40 W 60 W 75 W 100 W	15 W 25 W 40 W 60 W 75 W 100 W	Ban on all clear incandescent lamps					
	Frosted lamps	Incandescent lamps HALOPIN / HALOPIN ECO HALOSTAR STANDARD HALOLUX BT / HALOLUX CERAM HALOGEN ENERGY SAVER CLASSIC A / B / P / BW								
	HALOLUX BT clear									
	HALOGEN ECO Classic clear	18 W 28 W 42 W 52 W 70 W 105 W			18 W 28 W 42 W 52 W 70 W 105 W	Alternatives planned				
	HALOLUX CERAM ECO clear									
	HALOSTAR klar									
	HALOSTAR ECO clear									
	HALOPIN clear	25 W 40 W 60 W 75 W	25 W 40 W 60 W 75 W	25 W 40 W 60 W 75 W	25 W 40 W 60 W 75 W					
	HALOPIN ECO clear								Exception: G9 in Energy Class C	
	HALOLINE clear	60 W 100 W 150 W 200 W 300 W 500 W	60 W 100 W 150 W 200 W 300 W 500 W							
	HALOLINE P15 clear	750 W 1000 W 1500 W 2000 W								
	HALOLINE ECO clear								Exception: R7s in Energy Class C	
	HALOLUX T clear									
	Special	Further information at <a href="http://www.elcfd.org/documents/Special%20Purpose%20Lamps_090515.pdf">www.elcfd.org/documents/Special%20Purpose%20Lamps_090515.pdf</a>								
	Directional household lamps	The implementation measure for directional light sources will be issued at the end of 2010/start of 2011								

## Implementation measure for tertiary lighting

	Apr. 2010	Apr. 2011	Apr. 2012	Apr. 2013	Apr. 2014	Apr. 2015	Apr. 2016
 NAV-E	NAV-E STANDARD NAV-E/I NAV-E 4Y > 70 W NAV-E 4Y ≤ 70 W NAV-E E/I 4Y ≤ 70 W NAV-E SUPER 4Y		NAV-E STANDARD NAV-E/I NAV-E 4Y > 70 W				
 NAV-E Plug-in	NAV-E Plug-in ≥ 210 W NAV-E Plug-in 110 W NAV-E Plug-in 68 W				NAV-E Plug-in ≥ 210 W		
 NAV-T	NAV-T STANDARD NAV-T 4Y NAV-T SUPER 4Y		NAV-T STANDARD NAV-T 4Y				
 HQL							
 HWL	Exempt from the directive because of the spectrum of the lamp						
 HQI clear							
 HQI non-clear							
 HCI							
 T8	T8 BASIC T8 BASIC U-shape T8 LUMILUX T8 LUMILUX U-shape						
 T12 halophosphate	OSRAM withdrawal		T12		T8 LUMILUX		
 Ring lamp	T9 BASIC ring lamp T9 LUMILUX ring lamp						
 DULUX 2pin							
 DULUX 4pin							
 Standby losses FL	P <sub>0%</sub> 1 W		P <sub>0%</sub> ≤ 0,5 W				
 Non-DIM QT							
 DIM QT							
 PT							
 Luminaire	Only losses of the integrated control gear		The luminaire must be compatible with at least Class A2 control gear (except IP4X)				

Changes are possible as a result of the change procedure

Review by the EU Commission

 In portfolio

 Not in portfolio

# See the world in a new light – www.osram.com

On the OSRAM website you can find more than just the fascinating world of light and lighting, the latest information and interesting links, you can also download various practical tools and service offerings for commercial customers and consumers.

## Focusing on your needs.

To help you find what you're looking for even faster we have reorganized the OSRAM website so it fits better with your requirements. Products for lighting professionals from the lighting professional are all together in the PROFESSIONAL section. You will find advice, costings, business services, downloads and everything to do with training and know-how in the TOOLS & SERVICES section. Consumers can experience the entire OSRAM world of lighting in the CONSUMER section – lamps, luminaires and accessories for the home and automobile, the latest campaigns and competitions.

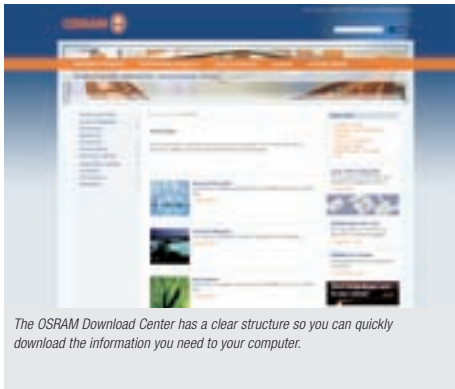
## Global Care on the world wide web.



*Sustainability and environment protection – the most important challenges that we face today – are fully covered at [www.osram.com](http://www.osram.com). There is even a CO<sub>2</sub> ticker and various tools such as the energy consumption calculator.*

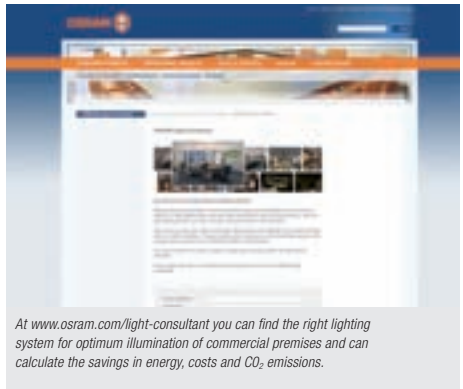


### **OSRAM Download Center.**



*The OSRAM Download Center has a clear structure so you can quickly download the information you need to your computer.*

### **OSRAM Lighting Consultant.**



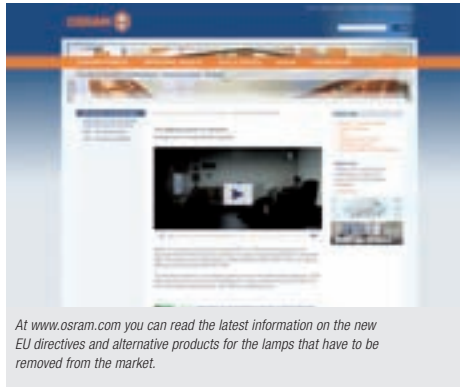
*At [www.osram.com/light-consultant](http://www.osram.com/light-consultant) you can find the right lighting system for optimum illumination of commercial premises and can calculate the savings in energy, costs and CO<sub>2</sub> emissions.*

### **OSRAM Automotive Lamp Replacement Guide.**



*Just what you were looking for: At [www.osram.com](http://www.osram.com) you can soon find out which of the more than 400 OSRAM automotive lamps is right for your vehicle.*

### **Information on EU directives.**



*At [www.osram.com](http://www.osram.com) you can read the latest information on the new EU directives and alternative products for the lamps that have to be removed from the market.*