



Energy efficient LED lighting
from around the world

PHILIPS

sense and simplicity



Frans van Houten

See what light can do

We have now reached a tipping point in the development of high quality light emitting diodes (LEDs) that can be used for general lighting in almost all applications. Quality LED lighting solutions help to address some of the key societal issues and opportunities we all face today - the energy crisis, resource scarcity, climate change, safety in and attractiveness of our cities, productivity in our offices, just to name a few. LED lighting solutions can help to provide an enhanced sense of health and well being where we live and work and in fact, we estimate that when combined with the latest solar and battery developments, our LED technology can help to provide light for the third of humanity which currently lives without electricity.

Frans van Houten

CEO Philips



6
Outdoor Lighting



14
Office Lighting



20
Horeca/Retail Lighting



28
Home Lighting

Simply
enhancing life
with light

Outdoor Lighting

can save up to 70%

70%

Savings potential per region

Saving potential	Global	Europe	North America	Latin America Incl. Mexico	Asia Pacific	Middle East and Africa
Euro billion	10	2	3	1	3	1
Mln tonnes of CO ₂	52	8	15	3	18	8
Number of power stations @ 2TWh/year	50	11	14	5	14	6
Car emissions mln cars @ 10k mile/year	20	3	6	1	7	3

Most of the world's roads are still lit by technology dating back to the 1960s. When installing new street lighting solutions, this will save up to €10 billion in energy per year. Future legislation within the EU and US will prohibit the installation of inefficient lighting technologies.

- Residents do not want cities to run street lighting needlessly, especially if it causes light pollution. Good quality, energy-efficient outdoor lighting can enhance urban well-being, providing residents with a greater sense of safety and security
- Our outdoor lighting solutions have helped places like Redbridge in London improve street visibility while reducing energy consumption by up to **50%**
- Today's LED lighting solutions, usage monitoring, dimming tools for conditions-based remote control and application of alternative energy sources can save energy by up to **70%**





Malaysian Highway

Malaysia

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The Project

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The Solution

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A44 Highway

Netherlands

The world's first stretch of motorway lit that entirely by LED lighting.

The Project

There's a world to be won here, explains Willem Zandvliet, Technical Manager of 'Sustainable Public Works and Water Management'. "60% of our energy consumption on highways and waterways goes on lighting. Where possible we're replacing conventional lighting by sustainable LED solutions, such as in tunnels or at locks." Installing LED lighting on highways is a different story. Zandvliet explains: "The speed of traffic and the large distances between masts necessitate a light level that cannot be achieved by replacing conventional luminaires by LED luminaires on a one-for-one basis. But sustainability is important for RWS, so we've decided to start a pilot project.

The Solution

Then things started moving fast. Especially since Ben Groot, property expert at the North Holland Secretariat of the Department of Public Works and Water Management, had a perfect piece of highway available in the A44 section between Burgerveen and Kaagbrug. "The road is only 8 kilometers long and relatively narrow. In addition, at 12 meters the masts are considerably smaller than normal." Following extensive market research by Toine Adams, who as senior advisor at Spectrum Advies & Design is responsible for the lighting plan, only one suitable solution remained in the end: Speedstar from Philips. "The luminaire has uniform light distribution and excellent color recognition and complies with the most stringent requirements and guidelines. Certainly in combination with Philips' Starsense telemanagement system, Speedstar offers easily the biggest advantages."





Solar LED lighting

Guiyang

Philips participated in the Guiyang project which is part of the 'Solar LED Lighting 1000 Villages Program' – an initiative launched by The Climate Group and the UN One Foundation – and provided rural communities in China with solar powered LED street lighting.

The Project

The aim of the 1,000 Villages Project is to explore effective policy measures and financial mechanism in rural areas. It is a five years project that was kicked off in August 2009.

There are 400 demo villages in China in the first two years and other 600 villages in China, India and Africa countries in the later three years.

The Solution

Solar LED lighting provides a high quality, sustainable lighting solution for people in remote areas who don't have access to the conventional electricity grid by extending the hours of daylight after the sun has set at an affordable cost, increasing the level of safety on roads and streets and allowing for more economic and social activity. The solution is also valuable in the "sun-rich" cities in and around the equator that can take advantage of the many hours of sunlight to supplement the capacity of their conventional electricity grid, addressing growing concerns about their ability to meet the steep increase in energy demand.

Nelson Mandela Bridge

South Africa

Philips colour changing LED lighting has been used to accentuate and support a key Fashion show which was held on one of South Africa's most iconic landmarks, the Nelson Mandela bridge in Johannesburg. The existing lighting scheme on the bridge, with its brightly coloured effects, was synchronized to help accessorise and enhance David Thale's Autumn collection during the Johannesburg fashion week.

The Project

In 2010, Philips collaborated with energy provider, City Power Johannesburg, to design and deliver a distinct LED lighting solution for the city's Nelson Mandela Bridge - an important road link between Newtown, in the heart of Johannesburg, and Braamfontein to the north.

The Solution

Philips provided a range of energy efficient LED lighting solutions to transform the bridge at night in a colorful and extremely sustainable way. An array of bright LED lights were installed along the bridge's pylons and anchorage cables, as well as on the handrails of the pedestrian walkways of the 284-metre span - ensuring that the bridge dominates the Johannesburg skyline at night, as well as providing safe passage for motorists and pedestrians.





Cairo Tower

Egypt

One of Egypt's most famous landmarks, the Cairo tower, has been given a spectacular new nighttime look, due to a new, energy efficient, lighting scheme. The stunning new lighting effects are created by state-of-the-art color changing LED technology from Philips, and the result is an exciting new image for this well-known Egyptian symbol. In addition the new lighting offers tremendous potential benefits including increased civic pride, community spirit, tourism and investment. Every building tells an ongoing story and new LED lighting can really bring this to life, and act as a powerful advert for the City itself, its culture and heritage.

The Project

Egyptian Prime Minister Ahmed Nazif officially switched on the new lighting scheme, at a launch ceremony on 11 April 2009 in Cairo. Philips Lighting CEO in Egypt, Tamer Abolghar said 'We are extremely proud to help promote our nations history and heritage in this way. The benefits for Cairo in terms of civic pride and increased tourism should be considerable. With our new LED lighting technologies we can now create night time effects which were never before possible'.

The Solution

The LED lighting technology used is extremely energy efficient and uses on average 80% less than a similar scheme using conventional lighting technology. This means both cost savings and environmental responsibility. Additional benefits of LED lighting include the ability to control color effects, which are clearly visible in the case of the Cairo tower, a long lifetime with very low maintenance costs, and design flexibility.

Town Hall Bremen

Germany

Ulrike Brandt lighting design is a combination of floodlighting and accent lighting. It creates a spacious impression.

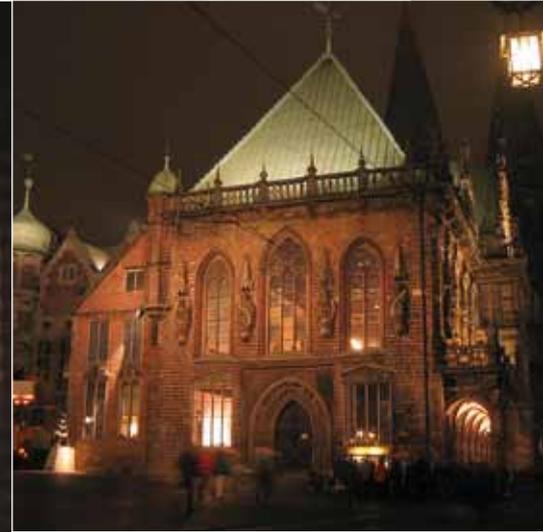
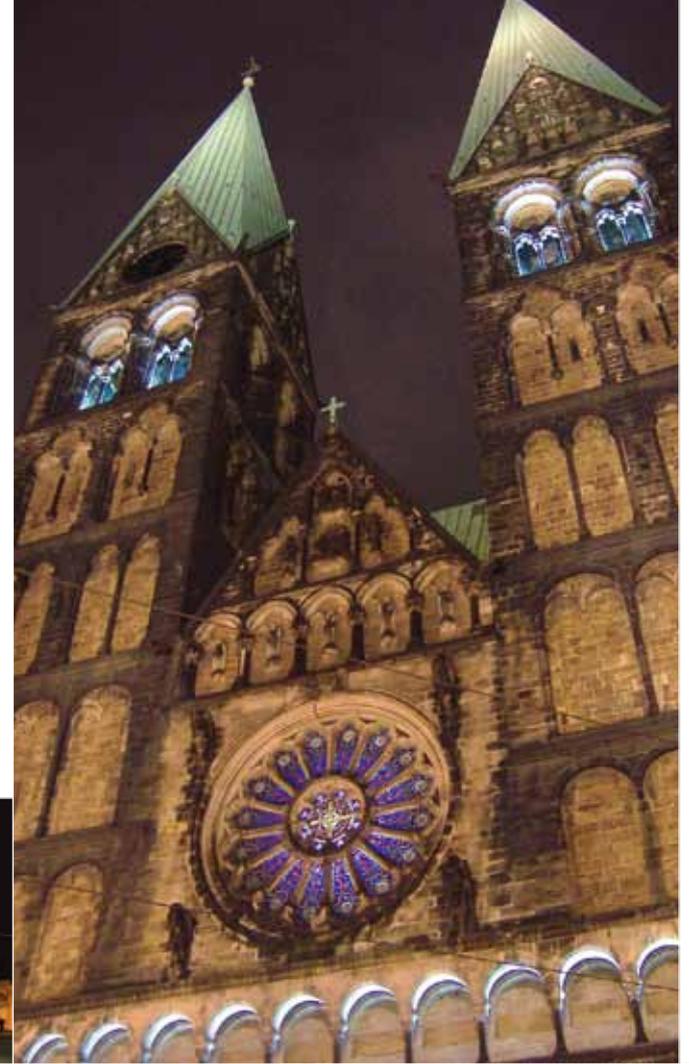
The Project

Among the many historic buildings in the centre of Bremen, two really stand out – the Town Hall and St. Petri Dom, with its towers that can be seen from far. Built between 1405 and 1408, Bremen Town Hall was declared a World Heritage site in 2004. Its architecture and sculptures symbolise the town's imperial and episcopal roots, as well as the power of the citizenry.

Based on old church buildings dating back to the 8th century, the St. Petri Dom was built in Romanesque style in the 11th and 12th century. It was then renovated in Gothic style between the 13th and 16th century and extended in the 19th century. In 2002, Bremen City Council commissioned Ulrike Brandt Licht a lighting masterplan for the city centre, which has since been implemented step by step. Besides the town hall and Dom, a number of other façades, squares and streets can now also be seen in a new light.

The Solution

The town hall is illuminated by floodlighting with grazing lighting on the façade and roof from asymmetric fluorescent Norka luminaires. On the Dom, LEDline2 accent lighting on the windows; intensive Decoflood floodlighting on the tops of the towers. For both façades, soft front lighting with Decoflood creates the right balance with accent on the centre part of the façade.



Office Lighting

can save up to 70%

70%

Savings potential per region

Saving potential	Global	Europe	North America	Latin America Incl. Mexico	Asia Pacific	Middle East and Africa
Euro billion	22	5	5	2	7	3
Mln tonnes of CO ₂	114	16	28	6	43	21
Number of power stations @ 2TWh/year	109	23	27	12	33	16
Car emissions mln cars @ 10k mile/year	44	6	11	2	17	8

Public and commercial buildings represent 60% of global lighting-based electricity use, while 70% of office lighting uses outdated, inefficient lighting systems. Switching from old to new office lighting can save up to 70% in lighting energy costs per year.

- Good lighting design not only improves the well-being of people at work, it can also improve performance by up to **15%**
- Together with Somfy, the leading specialist in automated sun protection systems for buildings, we combine the best of artificial and natural light
- LED lighting enables new designs and shapes due to smaller dimensions
- Our solutions combine the most energy-efficient light with presence detection and daylight dimming as a complete green solution, saving up to **70%**





Tour Sequana

Issy Les Moulineaux, France

“We were looking to construct a building supporting the image of the Bouygues Télécom, a building with a distinctive visual profile.

The Project

The development objective was to complete an ensemble of offices covering 100,000m² with HQE environmental certification in an area straddling two cities in close proximity to the heliport and the 'periferique'; two significant sources of noise, located in the vicinity of Paris. It is part of a massive urban regeneration programme for the Issy Les Moulineaux commune, specifically targeting companies associated with IT and new technologies.

The Solution

The design team searched for the perfect solution to balance the optimisation of natural and artificial light with the comfort of the inhabitants. The lighting consists of T5 high-performance luminaires and LED solutions. However, the unique solution of comfort and light balancing is in the combination of lighting and solar protection management systems - the Philips Somfy Light Balancing solution. A total of 3500 automated venetian blinds were installed, all motorised with Somfy LW motors. With the Philips Somfy Light Balancing solution, the Tour Sequana targeted energy consumption levels have been met. In addition, incorporation of this solution in the HQE environmental rating procedure, helped obtain the target of 10 on the performance level for visual comfort. The management of artificial light and natural light ensures the best level of indoor comfort in terms of light levels and glare. Maximising the use of natural light has a positive effect on wellbeing and the fact that this can be prioritised thanks to the quality of the glass and the automated blinds and lighting is fantastic.



AB Group

Orzinuovi, Italy

“We looked for an advanced solution that ensured a level of comfort for people working in the offices, as well as optimum management of energy resources.”

The Project

Founded in 1981 by Angelo Baronchelli, the AB Group is Italy's leading company in the design and installation of plants for the co-generation and self-generation of power from renewable sources. The group has always been passionate about energy efficiency and eco-sustainability, something which is at the heart of everything they do.

The AB engineering hub is designed to house around 100 engineers, technicians and sector specialists, making it the largest nerve centre for co-generation in Europe. From a lighting perspective it presented three challenges. Firstly, the spaces had to be lit in an intelligent manner without having to make use of natural light. Secondly, the solution had to provide comfortable light levels for employees working in the offices. And finally, excellent management of energy resources with no waste was of paramount importance.

The Solution

Philips innovative LED lighting technology was more than able to meet all three conditions. DayZone provides high-quality lighting with impressive visual comfort and glare control and colour consistency that are compliant with all office norms. LuxSpace features the latest LED technology and delivers consistent light output and high colour rendering. Not only do these two innovative solutions have a captivating, modern design, they also provide guaranteed energy saving, long-lasting components and no harmful substances such as mercury. What's more, they enable the AB Group to manage all the lighting by means of a single system, something that proved to be the deciding factor in choosing Philips.





Arup meeting room Amsterdam, The Netherlands

“In skilled hands, lighting becomes the fourth dimension of architecture, integrating and enhancing the other design disciplines.”

The Project

Arup is a global firm of designers, planners and consultants and the creative force behind some of the world's most innovative and sustainable designs. The company needed a lighting solution for their Amsterdam office that would reflect their contemporary thinking on lighting design.

The Solution

Philips DayWave was chosen for its inspirational design, sensual curves and visual dynamics. The solution creates ambience and well-being to energise and inspire and is in harmony with Arup's ethos on lighting.



Audi

Neckarsulm, Germany

“Everyone who walks past the redesigned room admires the lighting, with many of them remarking: I wish I had something like that!”

The Project

Audi has been writing automotive history for over 100 years. Many of their hallmark innovations have been developed and now roll off the assembly line at their location in Neckarsulm. As a global player, Audi is continuously optimising environmental factors such as energy, waste balances, soil conservation, water pollution and noise emissions. In 2008 they decided to renovate their building to create modern offices with state-of-the-art facilities. An especially attractive solution was required for their meeting facilities.

The Solution

DayWave was chosen for its elegantly curved design and linear form that creates an attractive wave of light. The LED technology illuminates the room in various shades of warm and cool white light, to create exactly the right ambience for each meeting and the luminaire also ensures it does it in style. The attractive design with aluminium housing is also a perfect match with the Audi brand in a visual sense.



Horeca/Retail Lighting

can save up to 80%

80%

Savings potential per region

Saving potential	Global	Europe	North America	Latin America Incl. Mexico	Asia Pacific	Middle East and Africa
Euro billion	16	3	5	2	4	1
Mln tonnes of CO ₂	79	10	29	6	27	8

20% - 30% of the energy bill in retail is lighting related. A global annual **saving up to €16 billion in energy costs** can be achieved by switching from old to new lighting in retail. For every application, food or fashion, there is a specific lighting solution, offering best colour quality and energy efficiency

Food/Fast Moving Consumer Goods

- LED Cooler/Freezer lighting for uniform white cool light and 80% energy savings
- Optimal energy efficiency with Teletrol controls

Fashion

- The StyliD LED combines flexibility, style and energy saving
- AmbiScene and its intelligent light control delivers dynamic, efficient and flexible light





Crowne Plaza Hotel Dublin, Ireland

“We changed every light point in the hotel to Philips – and 90% are now LEDs. Philips not only provided an energy-efficient solution, but also one that is absolutely right for our hotel.”

The Project

Crowne Plaza Ireland is run by the Tifco Hotel Group. Tifco used to manage its hotel lighting system via its own maintenance team and several subcontractors. Not only was this inefficient in terms of cost and accountability, the lighting system itself mainly used incandescent lamps, which were expensive to operate. With energy costs on the increase,

The Solution

“When we contacted Philips, they immediately recommended that they survey the entire hotel and provide a comprehensive Cost of Ownership tool. We were impressed,” says Thomas Colman, Tifco Procurement Manager. “What was also very encouraging was that they did not just recommend lighting solutions for that moment, they identified and planned for solutions which would be available in the future. It was obvious from the start that they were interested in a long-term partnership.”

The proposed solution was LED-based lighting. Once the Philips team gave Tifco the calculated savings and payback times, Tifco gave Philips something vitally important - trust. This trust enabled the Philips team to work with Tifco’s own people on trying different options and testing various solutions until the right solution was delivered in every area of the hotel. The most widely used solution was the MASTER LEDspot 7 W GU10.

Bijenkorf

Eindhoven, The Netherlands

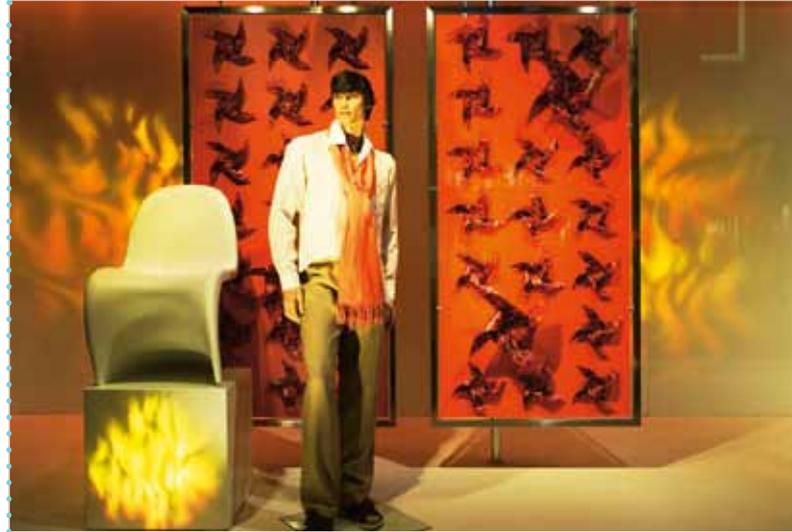
The Project

The first impression customers get of a store comes mostly from the window display. The display lighting is therefore an important factor in the establishment of that first impression. Illuminating surfaces and clear surfaces attract the attention of passers-by. And lighting scenes which change in a short time period are even more eye-catching as people are sensitive to changes in light.

Because it is flexible and adaptable, lighting enables shopkeepers to create dynamic displays which evoke powerful, appealing and new impressions. Lighting can be used for the optimisation of product presentations and can be adapted to support the latest collection, specific themes, the seasons, materials, colours and so on.

The Solution

The atmosphere of a display can be made more attractive by making use of effect projectors which offer a wide range of atmospheric lighting effects based on fire, water, oil or gobo projection. This introduces a new means of communication. The Fire effect projector shapes the effect of a flickering flame whereas the Water projector produces the effect of flowing water. The Oil projector creates psychedelic patterns by projecting through a rotating oil wheel and for a personalised effect the gobo projector is the ultimate tool for shaping a unique lighting effect which can easily be changed in order to be adapted to your store or theme. The continuous movements and changes in the projection add an extra dimension to the store's appearance.



BILLA supermarket Vienna, Austria

“We are committed to innovation and quality, and Philips lighting is helping us by supplying energy-efficient lighting solutions.”

The Project

BILLA, Austria's leading supermarket chain, is committed to customers and their shopping experience. The chain concentrates on emphasising the freshness of the food more effectively; lighting plays an important role in this. Use is now made of just three lamps throughout the group, providing considerable savings in the area of purchasing and maintenance and helping to create a cohesive, energy-saving solution.

“We are committed to innovation and quality,” says Volker Hornsteiner of BILLA, “and Philips lighting is helping us by supplying energy-efficient lighting solutions.”



Beefeater Grill Restaurant

Luton, Bedfordshire, United Kingdom

“Smart investment in new lighting technologies is part of our ‘Good Together’ responsible business strategy. It helps us to reduce our energy signature, mitigate carbon emissions and conserve natural resources, ensuring our guests still enjoy the welcoming and warm atmosphere they expect in our hotels, restaurants and coffee shops.”

The Project

Whitbread is the power behind some of the UK’s most successful, much-loved hospitality brands including Premier Inn, Beefeater Grill, Brewers Fayre, Table Table, Taybarns and Costa Coffee. It employs over 40,000 people worldwide and serves more than 10 million customers every month in the UK.

Introducing LED lighting to replace its halogen lighting as a pilot trial in its Luton Beefeater Grill restaurant is helping Whitbread to drive forward its corporate sustainability programme ‘Good Together’. Furthermore, as part of a larger project to reduce its overall carbon footprint, Whitbread’s lamp replacement programme will see an investment of £2.7m across its brands this year. Whitbread has a target to reduce its overall CO2 consumption by 26% by 2020.

The Solution

Whitbread installed the MASTER LED spot GU10 in its bar and dining areas but the lamps are also particularly suited to public areas such as lobbies, corridors and stairwells, where lighting is on 24 hours a day, seven days a week.





Ariane Hotel

Ypres, Belgium

“Philips has shown that LED lighting also provides atmospheric, warm white light. The efficient energy consumption of LED lighting is naturally an extra benefit. This lighting has exceeded all of my expectations. And the guests love the new LED lighting too.”

The Project

The historic city of Ypres has much to offer visitors. The Great Market with its gothic Cloth Hall, Saint Martin’s Cathedral with its rich art collection and the many shops and terraces make this city well worth a day trip. For a longer stay the Ariane Hotel has always been a superb base. However, since this four star hotel underwent an extensive expansion and renovation programme and was fitted with Philips’ state-of-the-art LED lighting, it now offers comfort and ambience at the highest level.

The Solution

Because the concrete ceiling of the glazed entrance did not lend itself to built-in fittings, Feliers had 17 lowered ceiling panels specially manufactured for this purpose, fitted with LuxSpace built-in luminaires. Combined with the MASTER LEDspot MV GU10 7W lamp, in the evenings this entrance is transformed into a spectacular foyer. For good working light, the ceiling above the reception was fitted with SmartForm luminaires. Above the reception desk hang the austere designed Celino luminaires. The MASTER LEDspot MV GU10 7W was also utilised in the offices, for the illumination of the walls. The fresh, square fitting of the eW Downlight gives the bar and restaurant a modern ambience. The Celino was used in the corridors of the hotel as a wall luminaire. These are also to be found above the reception desk. The bar has become a real eye-catcher due to the ‘invisible’ eW cove lighting under the counter and behind the shelves.



Bostonian retail store

Multiple locations, United States

Shelves lighting for the specialist men's footwear brand, for a multiple store roll-out in the United States.

The Project

Bostonian and its sister brand Clarks operate a network of retail stores nationwide, at least 15 of which will apply iV Profile to light their display shelving. iV Profile was chosen as a low-maintenance and long-lasting alternative to Bostonian's existing fluorescent display lights, which required costly and frequent replacement. The retailer designed special display fixtures that incorporate iV Profile to downlight each shelf. iV Profile also allows for different Kelvin temperatures to be set according to the display location, for example cooler shades of white for displays near store windows and warmer shades towards the store's interior.

Intelligent solid-state lighting reduces electricity costs by consuming less power and radiating very little heat, which in turn lowers cooling expenses. As LED technology continues to advance and exceed the performance levels of conventional sources, the case for using intelligent solid-state lighting as an energy-efficient alternative is becoming even stronger.

The Solution

Philips' IntelliWhite™ series combines advanced high-brightness white LEDs with patented digital control technology to enable both traditional and completely new uses of high-quality white light. iV Profile is a low-voltage linear unit designed for interior display, exhibit, under-cabinet, task and alcove lighting. It is unique in that it features variable colour temperature and can produce cool to warm gradients of white light from a single fixture. It also extends the inherent benefits of LEDs – such as efficiency, long life, durability, and lack of radiated heat and UV emission – to white-light applications.



Home Lighting

can save up to 80%

80%

Savings potential per region

Saving potential	Global	Europe	North America	Latin America Incl. Mexico	Asia Pacific	Middle East and Africa
Euro billion	40	9	15	1	10	5
Mln tonnes of CO ₂	214	32	81	3	65	33
Number of power stations @ 2TWh/year	202	45	76	5	50	25
Car emissions mln cars @ 10k mile/year	83	12	31	1	25	13

In 2010 around 11.5 billion incandescent lamps were sold worldwide, of which 75% are used in homes. The global installed base is still 67% incandescent lamps vs. 33% energy savers.

- Consumers have more choice through a wide variety of energy-efficient solutions enabling them to create the desired ambience at home
- Simply switching incandescent lamps to other energy saving lighting technologies will result in an average saving of **70%** in energy use and electricity costs
- Philips LED bulbs offer high quality light and last 25 times longer, using **80%** less energy than traditional bulbs





Home lighting

Energy efficient LED lighting for the home, a new era for consumers.

LED lighting is to change the way people use and experience light. With Philips LED based lighting solutions will offer consumer more exciting possibilities to enhance your home and create the right ambience. The innovations are designed to complement both style and mood, in an energy efficient way.

The real breakthrough however lies in the combination of beautiful design and the kind of variety people want in their homes, be it functional or ambient lighting. With the Philips LivingColors consumer luminaires, the lighting design is minimalistic yet stylish and contemporary that you'll want to make it the centerpiece of your interior. The range is based on LED, saving up to 80% energy with a lifespan of up to 20 years.

The Philips LivingColors range allows consumers to create the perfect atmosphere through the use of coloured lighting. Each colour is available with a tip on the remote control, matching the mood and the occasion, be it a romantic dinner for two or a relaxing evening with friends.

Philips range of LED bulbs can simply be inserted into standard lamp fittings but which only use a fraction of the energy required by traditional bulbs. Not only do the LED bulbs switch on instantly and last up to 25 times longer than traditional bulbs, they also pay for themselves and meanwhile the contribution to the environment starts right away.

Investing in LEDs means investing in a more sustainable, and enjoyable, way of lighting your home and can transform you and your family's space. Philips LEDs give you better quality and color without having to compromise on energy efficiency.





Solar LED lighting for education

Uganda

“Simple solar powered lights will allow children to do homework after dark, or for people of all ages to read at night.”

- **Cost saving:** Saves money, cheaper to run than kerosene
- **Support for education:** Provide lighting for children to study in the evenings and help adult education classes
- **Better for health:** Better quality light. Smokeless solutions that improve the health and hygiene of the home

Solar LED lighting for home

Uganda

Home lighting will extend the day, allowing people to do more in the evenings.

- **Cost saving:** Saves money, cheaper to run than kerosene
- **Support for education:** Provide lighting for children to study in the evenings and help adult education classes
- **Social benefits:** family interactions; meeting friends
- **Better for health:** Better quality light. Smokeless solutions that improve the health and hygiene of the home
- **Safety:** No fire hazard unlike kerosene lamps



Simply
enhancing life
with light





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