

INDIA'S FOREMOST MAGAZINE ON THE LIGHTING INDUSTRY

# Lighting India

Vol. 13 No. 1

January-February 2018

**“Lighting designer must be  
an artist who should  
have awareness  
of all the art forms”**



Photo Courtesy: From this production 'SPECTRUM' by Monica Nayak



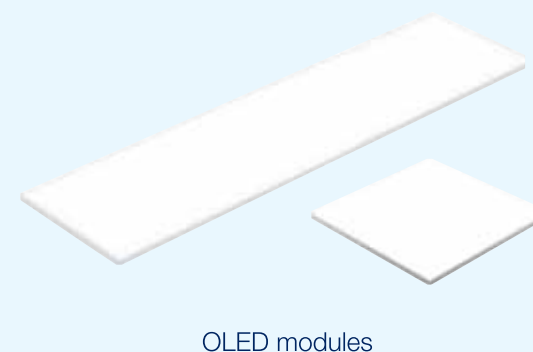
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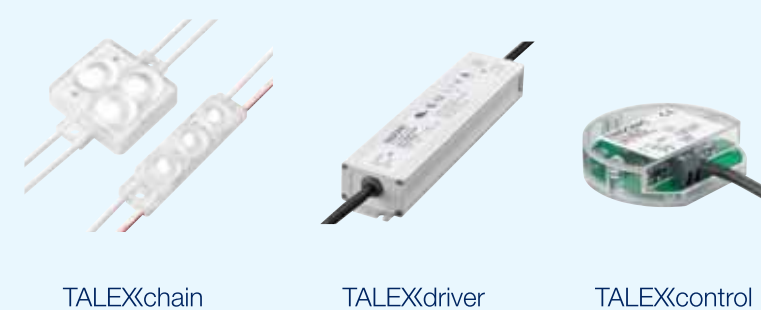
## Electronic components



## Controls



## Signage





Hello and welcome once again to *Lighting India*, the oldest and exclusive magazine on the lighting industry in India. Wishing everyone a Very Happy New Year!!

This season our issue focuses on 'Street & Safety Lighting'. We have a couple of articles written on this topic and have tried curating the best of projects for our readers. A report from Navigant Research, analyses the evolution of smart street lighting technology and market trends, providing global market forecasts of Smart Street lighting hardware, software applications, and services, broken out by segment and region, through 2026. One of our renowned

authors Dr. Amardeep M. Dugar has presented a case study emphasising on the interiors of Hyatt Place Rameshwaram. Our photo feature this time consists of two projects from the studio 'The Blue Leaves Design Group'.

Biswajit Sengupta talks about the Future of LED in Streetlighting in his article. He believes that despite several advantages of energy efficient LED light source, there are a lot of hurdles to overcome before it is able to take over HPS in streetlighting. One of the major hurdles is retrofitting the HPS streetlighting and replacing the lamps with LEDs of CCT 2700K to 3000K. Once this can be achieved upgradation of existing streetlights will save energy upto 80%, produce better light colour stability and can be dimmed to adjust to the traffic load.

This time we draw inspiration from a very eminent Stage Lighting Designer, Sreekanth – who is based in Thiruvananthapuram. He started his career as a theatre actor and performance facilitator, where he found himself into theatre lighting design.

On the Interview front we have Navin Kanodia, Interior Stylist & Creative Director, S.T.Unicom Pvt. Ltd., he talks to us about how Indians are now aware of international décor trends and they prefer contemporary settings.

Anil Bhasin, Senior Vice President of Havells India speaks to us about the industry, company and its legacy that lives. Analysts Shrikant Mahankar and Anand Gundewar through their article explain how Street and safety lights improve visibility by reducing the glare impacts of headlights of approaching vehicles through their article.

Hope you enjoy reading this issue as much as we in the editorial and design team have in bringing this to you. Until next time, happy reading and do send in your comments to me at [miyer@charypublications.in](mailto:miyer@charypublications.in)

*Mahadevan*

Publisher & Editor-In-Chief

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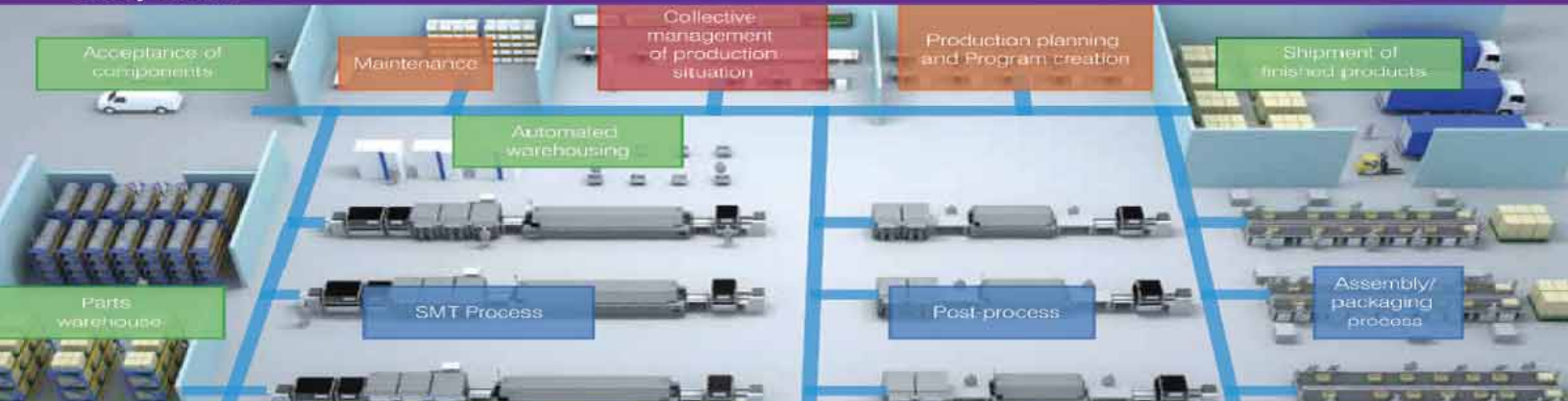
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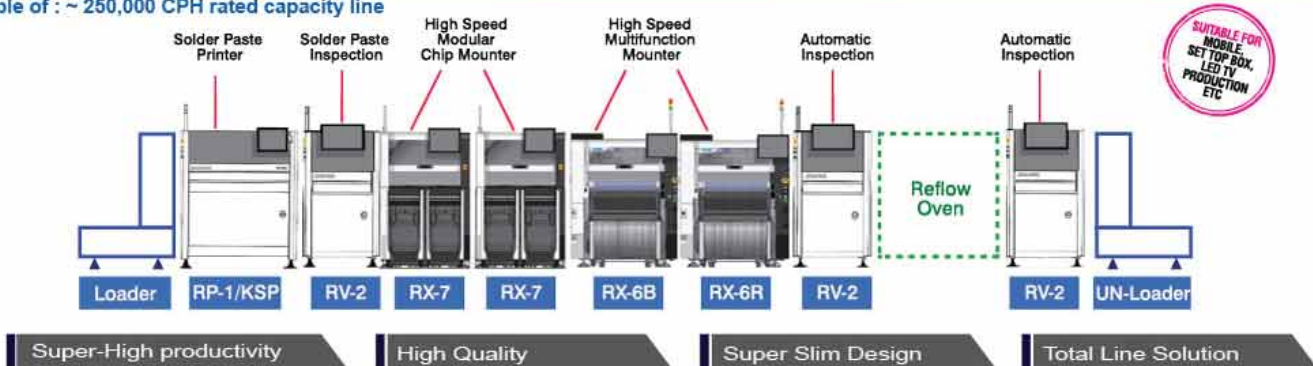
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# contents

Vol. 13 | No. 1 | January-February 2018



Sreekanth, a very renowned Thiruvananthapuram-based lighting designer in the country, started his career as a theatre actor and performance facilitator, where he found himself into theatre lighting design under the guidance of exponent lighting designers like V. Ramamurthy (India) and Remy Nicholas (France). He speaks to Lighting India about his journey so far and his new venture.



## articles

The Future of LED in Streetlighting . . . . . 26

Lighting with LEDs . . . . . 28

Street and Safety Lighting: Need for Improved Safety of Drivers, Riders, and Pedestrians . . 40

Hyatt Place Rameshwaram highlighting traditional ethics with modern ethos . . . . . 48







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## features

Burton Bulb debuts on Kickstarter . . . . .	15
Thorn Luminaires add a fresh look to the newly refurbished City, University of London . . . . .	20
President of India inaugurates dynamic façade lighting of Rashtrapati Bhavan . . . . .	44
Smart Living Ideas from Häfele . . . . .	56
Balgheim district upgrades to sustainable LED streetlighting . . . . .	66
MVRDV completes Tianjin Binhai Public Library . . . . .	68



Publisher's Letter . . . . .	2
News . . . . .	8
Appointments . . . . .	16
Awards . . . . .	18
Market Scenario . . . . .	35
Inspirational Story . . . . .	58
Legacy . . . . .	38
Pre-Event Info _ HKTDC . . . . .	63
Pre-Event Info _ Light + Building 2018 . . . . .	64
Product Profile . . . . .	70
Index to Advertisers . . . . .	71

department

## Interview



"Indians are now aware of international décor trends and they prefer contemporary settings"

36

– Navin Kanodia  
Interior Stylist & Creative Director  
S. T. Unicom Pvt. Ltd.





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## iBahn Illumination launches **PRIMA** and **ELITE** Series



**i**Bahn Illumination, the first company in India to specialise in Smart LED lights, announced the launch of its PRIMA and ELITE Series of spotlights. They are the country's first app-operated chip-on-board (COB) lighting solutions.

PRIMA offers reflector-based spotlights with fixed and adjustable spots. ELITE is a lens-based spotlight with a modular design of four different reflector attachments – Fixed, Swing, Angle and Curve. Priced between INR 2,000 and INR 5,000. Available in 8W and 16W, Bright and Dim (Prima), and Warm and Cool (Prima and Elite) lighting options, which allow customers to control the dimming and colour temperature as per their requirement.

Rajeev Chopra, Co-Founder & CEO, iBahn Illumination, said, "We are very excited to add the PRIME and ELITE COB spotlights series to our portfolio of products. We believe this series will meet the ever-evolving requirement of good quality lighting of our customers, delivering great lighting experience for them."

Arjun Shahani, Co-Founder & COO, iBahn Illumination, said, "The launch of our PRIME and ELITE COB spotlights series is a game changer for iBahn, our customers and the Smart LED industry. COB allows for a higher packing density than the surface-mount technology, resulting in more intensity, choice of beam angles and better light quality for the user. We will continue to expand our product portfolio with such exciting solutions."

Compatible with Android and iOS, the spotlights provide exceptional indoor lighting and can be applied in spaces such as the living room, bedrooms, in POP ceilings for home, corridors, showrooms, cafeteria, restaurant, hotel lobbies, reception areas and in recessed gypsum. ■

## ChamSys MagicQ MQ500 used in London New Year Firework Display

**L**ondon saw in the New Year with a world-class spectacular firework display. Jack Morton Worldwide, the global brand experience agency, created the experience – an event which it has conceived and produced for fourteen consecutive years. Contributing to this year's event was a ChamSys MagicQ MQ500 Stadium console, which was used by lighting programmer Paul Cook to control the 18-universe lightshow that supported the firework display.



The display, which took place over the River Thames and the Coca-Cola London Eye, is a unique global showcase for the iconic city, reflecting its dynamism, creativity and openness. The show was seen by millions of people on BBC One and live by over 100,000 people in viewing areas on the banks of the River Thames.

Synchronised and triggered by GPS to Big Ben's chimes, the 12-minute show lit up the River Thames with 2,000 lighting cues and 12,000 fireworks producing 50,000 projectiles. The FOH station, with its MagicQ MQ500 Stadium desk and MagicQ MQ80 backup, was situated on the river bank directly opposite the Coca-Cola London Eye. From this position, the console controlled the 640 RGB panel lights permanently installed on the Coca-Cola London Eye, as well as 32 profile fixtures, 32 blinders, 30 LED hybrid units and 16 batten washes that were brought in for the spectacular New Year's Eve event. ■

## Chauvet opens French subsidiary

**C**hauvet, a global supplier of entertainment and architectural lighting, has revealed the opening of Chauvet France, a wholly-owned subsidiary located in Paris. The new facility is responsible for directly distributing and supporting the company's brands: CHAUVET Professional, CHAUVET DJ and Iluminarc in France.

For Chauvet, previously distributed by third parties in France for over a decade, the new facility demonstrates its commitment to the French market. Albert Chauvet, CEO of Chauvet, said, "Many of our French customers have been buying our lights for years, so the time had come to support them by having a direct presence in France. Having a local presence will make us more responsive to the specific needs of our customers."

Chauvet France will be dedicated to lighting, a focus that the company believes will also enhance its level of service. "We are lighting people and we believe that lighting deserves a full-time commitment," said Michael Brooksbank, General Manager of Chauvet Europe.

Chauvet France is staffed by seasoned lighting professionals, including the recently appointed Chauvet European Sales Director, Martin Fournier, Jerome Garnier, Nicolas Pommier and Juliette Mason. "We are focused on delivering the highest quality customer experience" said Fournier. "We have a broad range of products, all designed to meet specific customer needs."

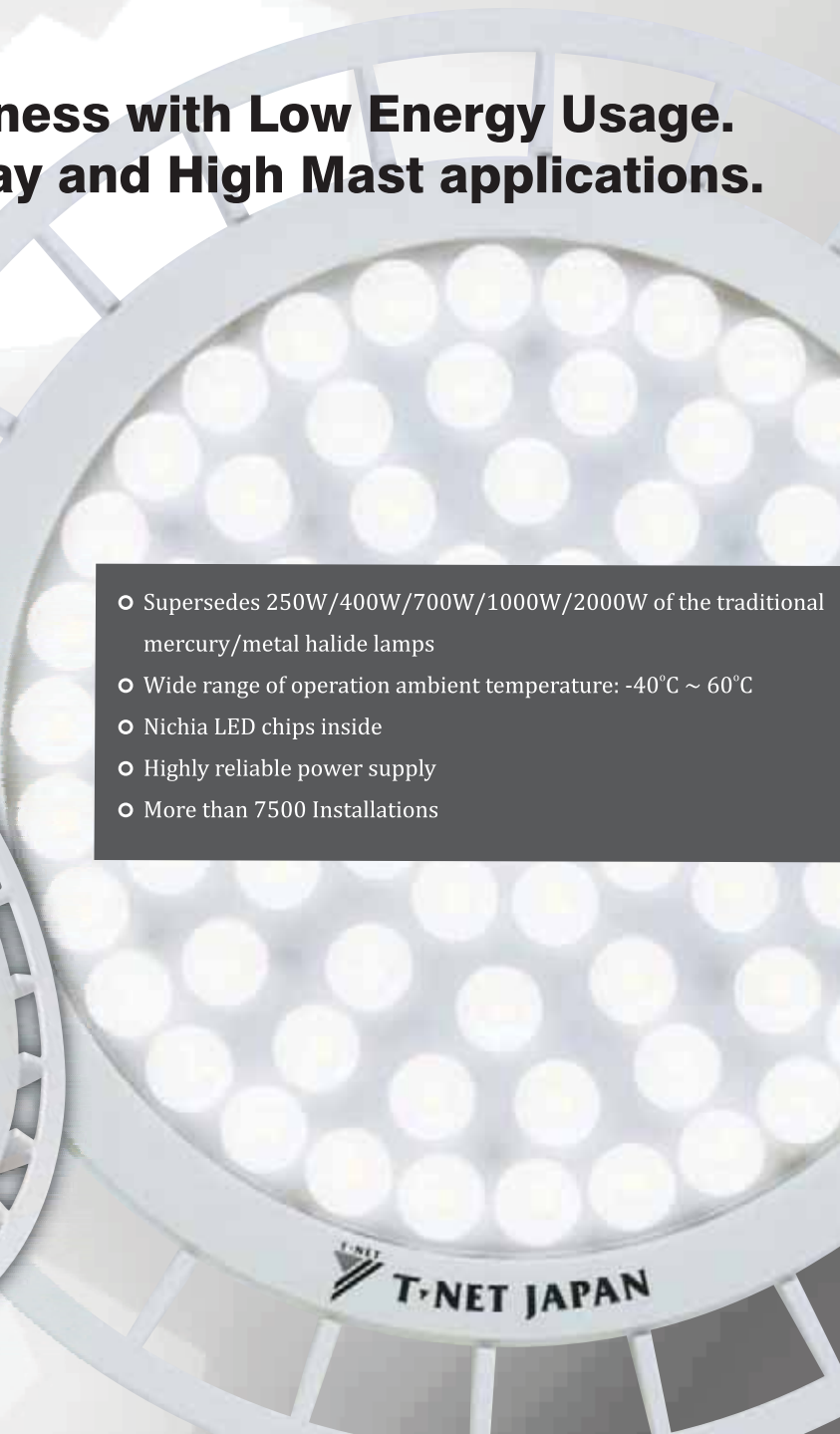
It is the third European subsidiary and the fifth domestic subsidiary of the Florida-headquartered manufacturer. ■



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## Orient Electric gets positive response for LED Battens, expands range



Orient Electric, part of the diversified US\$ 1.6 billion CK Birla Group, has expanded its LED Batten range following the overwhelming response it has received from the trade as well as consumers. The company had launched an integrated advertising campaign in the month of August-September to push for the expansion of LED batten as an ideal replacement for conventional fluorescent tube fixture where used choke, starter & the constant flickering were regular pain points for the consumers.

Orient has now expanded the range to include three new models – 18W tri-colour Moodlight LED batten which can provide three different colours of light as per consumers mood and or according to the ambience of the room, 24W Sunlight LED batten that offers high brightness and 20W Pearl LED Glass Tube batten with unique fixture free design & low glare light. This range of Orient LED battens ensures better & long lasting lighting with significant cost savings.

Puneet Dhawan, Sr. VP and Business Head, Lighting, Orient Electric, said, "Our recent campaign to create awareness and trigger replacement of age-old conventional tube lights with LED Battens has turned out to be a huge success. Our revenue from LED battens has increased by 4 times post the first phase of the campaign."

## iGuzzini reveals the acquisition of the control of Sistemalux

iGuzzini lighting, international leader in the field of architectural lighting, signed today the acquisition agreement for 70% of the assets of Sistemalux Inc. The Canadian company, based with its headquarters and production plant in Montréal, is expected to close 2017 with revenues of 30 million Canadian dollars. Through the acquisition iGuzzini reinforces its presence on the North American market and completes its product range.

Founded in Montreal Canadian family Folisi, most qualified players production and indoor and outdoor commercial and company operates with a agencies, offices and (Vancouver, Toronto, United States (New York). iGuzzini and the



Andrea Sasso

started more than 20 years ago when Sistemalux became an iGuzzini distributor.

Andrea Sasso, CEO of iGuzzini illuminazione, said, "The acquisition of Sistemalux represents an excellent opportunity to reinforce our presence in North America - where we double the turnover – and improve the profitability and the penetration capability in this important market characterised by international specification, high technological standards and great growth potential."

in 1984 by the Italian-Sistemalux is one of the in the sector of design, commercialisation of lighting systems for residential projects. The network of 54 distribution showrooms in Canada (Quebec City) and in the The partnership between shareholders of Sistemalux

## Luminous steps into the stabilizer business

Luminous Power Technologies, a well known residential power backup solutions provider & home electrical specialist, has decided to further strengthen its portfolio. Luminous has decided to foray into the Stabilizer industry with its ToughX range of offerings.

The power supply in India is erratic and often leads to voltage fluctuations which can damage the household appliances. Almost every household has either a Refrigerator or a TV or an AC and due to this fluctuating voltage a stabilizer is required for safeguarding the appliances. Company's aim is to become a complete power back up, solar and home electrical company and this launch is one more feather in its cap.



Vipul Sabharwal, MD, Luminous power technologies, stated that "Luminous has been pioneering the product development in India when it comes to power back up solutions & has been instrumental in shaping the industry as we see it today. The company has been responsible for bringing happiness in 70 million homes in past 3 decades. By adding stabilizer to its portfolio, it has further extended its promise of powering happy homes and making sure that your appliances are safeguarded, no matter what the voltage situation is."

The name ToughX has been derived keeping in mind the tough voltage scenario in India and the X factor we bring to the table in combating it. This range comprises of 6 models with 4 variants for Air Conditioners (up to 1.5 Ton), 1 for Refrigerators (up to 450L) and 1 for Televisions (up to 32" + Set-Top-Box).

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## SCR becomes 1st Zone on Indian Railways with 100% LED Lighting



**S**outh Central Railway (SCR) registered another remarkable achievement in energy conservation. It remained in the forefront towards adopting various energy conservation measures and attained the status of becoming the 1st Zone on Indian Railways to complete 100% LED lighting at all the Railway Stations. Vinod Kumar Yadav, General Manager complimented the Officers and Staff for the outstanding performance. He advised them to march ahead in progress and bring laurels to the Railways and Nation.

All the 733 Railway Stations on the zone have been provided with 100% LED lighting duly replacing 75681 numbers of different wattage LED fittings in place of conventional light fittings. Division wise details of LED stations includes Secunderabad -162, Hyderabad -100, Vijayawada -158, Guntakal -157, Guntur -76 and Nanded -80 Stations as on 06th February, 2018.

This provision of LED lighting is expected to save a total 32 Lakh units of electrical energy and an amount of Rs. 270 Lakhs per year. The division wise details of energy savings are Secunderabad-8.8 Lakh units, Hyderabad-3.5 Lakh units, Vijayawada-8.1 Lakh units, Guntakal-6 Lakh units, Guntur-2.9 Lakh units and Nanded-2.7 Lakh units per year. The division wise revenue savings are Secunderabad-Rs.74 lakhs, Hyderabad-Rs.30 lakhs, Vijayawada-Rs.68 lakhs, Guntakal-Rs.51 lakhs, Guntur-Rs.24 lakhs & Nanded-Rs. 23 Lakhs. ■

## Philips Lighting powers up Barefoot College in Rajasthan

**P**hilips Lighting, one of the leaders in lighting, revealed that it has powered the Tilonia campus of Barefoot College in Rajasthan with a 116KW solar system, thereby enabling the college to have access to reliable off-grid energy. A grant from Philips Foundation replaced a thirty-year-old, aged-out solar equipment, more than tripling the kilowattage in parts of the historic campus that empowers rural women to earn their livelihoods.



Since its humble beginning nearly 50 years ago, the Tilonia campus of Barefoot College in Rajasthan, India has enhanced the lives of the rural poor through a combination of local knowledge and appropriate technologies. Women from all over the world --representing nearly 100 different countries-- have come to Barefoot College to train to become solar engineers and electrify their villages upon their return.

The new solar panels installed on the 'old campus' of Barefoot College allow for increased work and training capacity for two of its vital programs, Enrich and Amritchurna, which are housed there. For this project, Philips Foundation worked with Orb Energy, a leading provider of rooftop solar systems in India, to install a 116-kW system across the Barefoot campus, with full battery backup. It now powers the Solar Office Block, Solar Workshops, Solar Mama Residences and the Community. ■

## PR Shines Bright at Kankaria Carnival 2017

**T**he Kankaria Carnival 2017, which took place in the Indian city of Ahmedabad (Gujarat), between December 25-31, was brought to life by PR XR 330 Beams throughout the seven days.



Local event production company Ananta Stagecraft updated their inventory with 100 XR330 Beams in time for the event. A special timecoded show was designed for the celebrations of Ahmedabad, which was declared India's first Heritage City.

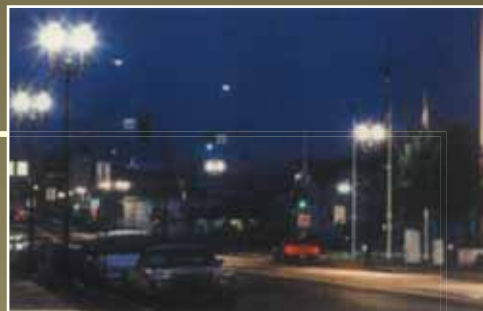
The show's highlight was the XR 330. Some 40 units were used in the show along with various other fixtures. According to designer, Jay Joshi, the fixture has great abilities, with silent operation and great stability. The colours are extremely bright and their split gel functions impressive, while the Prisms and Gobo wheels were utilised to the maximum. The fixture also delivered an unfocused spot look which was used creatively in the show.

Being a wireless DMX controlled fixture the XR 330 Beams can reach great heights and can be spread along venues without interfering with DMX signals.

Joshi said, "We are proud that we have invested in the right fixtures. We have also invested in various other PR fixtures like the XR 440 BWS, XR 480 BWS and XLED 4022RZ. We look forward to developing great business opportunities with the investments we have made." ■



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## Wipro Lighting launches Internet of Lighting

**W**ipro Lighting at its signature event 'Light Show 2018' launched its Internet of Lighting (IoL) solutions for Smart& Connected indoor & outdoor lighting.

With the emergence of IoT and Big Data, Smart and Connected digital lighting based solutions are the way forward as they will bring in intelligence & functionality into lighting systems, enhance user experience and deliver desired outcomes for customers.



Anuj Dhir

Wipro Lighting's alliances with International Technology companies will usher a new revolution in work-lives. They have collaborated with Cisco for Power on Ethernet (PoE) based lighting solutions and Human Centric Lighting solutions for new age workspaces enabling improvement in workspace productivity and enhanced employee well-being. Their partnership with pureLi-Fi, Scotland will deliver high speed & secure data transmission through LED luminaires.

Armed with Smart & Connected outdoor lighting solutions, Wipro Lighting is ready to provide complete lighting infrastructure for the upcoming Smart Cities of today. In outdoor lighting, Wipro demonstrated its intelligent and connected outdoor lighting capabilities for improved public safety and comfort.

Anuj Dhir, Vice President & Business Head, Wipro Commercial Lighting Business, said, "It has been an incredible journey for Wipro Lighting over the last 25 years. As a leader in Lighting Solutions, we have always made sure that we provide our customers with the Gold Standard in Lighting Innovation. Design & Innovation have become a way of life at Wipro and cutting edge work is happening on new products and new technologies. Internet of Lighting (IoL) is our first step in that direction in offering our customers best of breed solutions in Lighting & Beyond". ■

## Transrail Lighting wins Substation and Railway Electrification orders

**I**ntegrated power transmission and distribution company, Transrail Lighting, has forayed in the substation and railways electrification businesses and secured orders worth Rs 395 crore which are now in execution stage.

The substation mandate includes orders from Madhya Pradesh Power Transmission Co. Ltd (MPPTCL) for two 400 kV substations and from Chhattisgarh State Power Transmission Co. Ltd (CSPTCL) for three 220 kV substations.

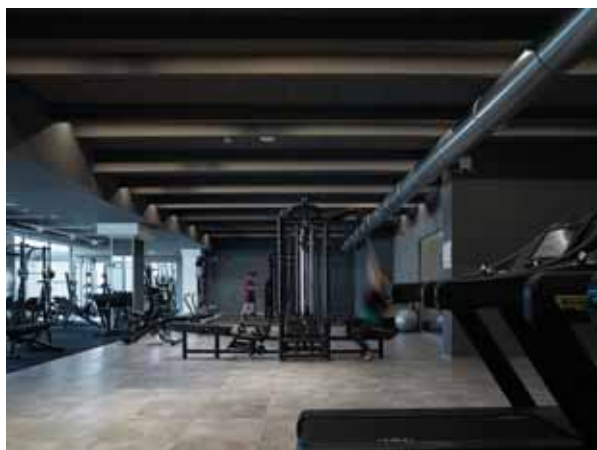
Transrail bagged the railway electrification order from IRCON International Limited for electrification of over 200 track km in Madhya Pradesh.

D.C. Bagde, Managing Director, Transrail Lighting, said, "With Government's focus on bringing down the aggregate technical and commercial (AT&C) losses, T&D spending is expected to gravitate towards substations. An estimated 300,000 MVA of substation capacity addition over the 13th Five Year Plan (2017-2022) represents a huge opportunity for T&D players and Transrail is hoping to corner a meaningful part of it."

Elaborating on the opportunities in the railway electrifications, Bagde added, "The government has proposed to run India's entire rail network on electricity to cut down on pollution and its diesel bill. The government's plan of working towards electrification of over 30,000 km of tracks over the next five years is expected to augur well for the company. Further, laying of new tracks also presents a vast opportunity for the sector and Transrail." ■

## Decentralised lighting management for fitness club

**T**he newly opened ZERO NERO fitness club in Bergamo, northern Italy, offers state-of-the-art equipment training, a trendy range of courses and relaxation in a building of approximately 1,500 square metres. A system solution from Tridonic creates the right lighting scenes in



all areas. The studio operator benefits from flexible control and reliable maintenance via the cloud with the connecDIM gateway.

All it takes is one call to FastLed near Verona, specialist in LED solutions, and then the lighting level in the experience showers is adjusted via the cloud, for example. Luminaires or additional light switches can also easily be regrouped. The operators of the fitness studio have assigned their lighting management to FastLed. "The end user in Bergamo can rely on getting a very flexible and quick response to their requests," explains Giampaolo Sparesotto, Technical Manager at FastLed. This also applies to maintenance of the system.

FastLed performed the light planning for the various requirements in reception, in the open space with the sports equipment, the teaching studios and the spa and beauty area, and implemented the lighting concept. All those involved were impressed by the offer from Tridonic as the ideal holistic solution from modules and drivers to decentralised, intelligent lighting management. ■

# Burton Bulb debuts on Kickstarter



**B**urton Lighting, the premier Neo-Vintage LED lighting company, launches The Burton Bulb on crowd-funding site Kickstarter. The Burton Bulb is the only vintage LED lightbulb that has True Colour Dimming and Flickerless LED Technology. Designer and consumer markets are trending towards Vintage Edison decorative incandescent light bulbs, and The Burton Bulb provides an energy efficient solution utilising LED technology and high-quality features, while achieving the soft warm glow of traditional vintage incandescent bulbs.

Burton Vargas-Chambers, Founder and CEO of Burton Lighting, said, "Vintage Edison-style lighting design trends continue to grow in popularity. As a result, interior designers have been forced to compromise with high energy costs and high heat to achieve their nostalgic, vintage look. This has left homeowners, restaurateurs, hoteliers, and many others with high electricity bills."

This product is extremely versatile and crosses over to many applications including theatre, film, HD television, commercial, and personal use. The high-quality bulb solves the problems of poor colour, excess flicker, and an inability to dim that you find in older versions of LED bulbs.

After two years of design and testing, The Burton Bulb is ready to change the lighting industry and usher in a new era of LED technology. Burton Vargas-Chambers has poured his creativity, resources, and time into this project and funding from the Kickstarter campaign will ensure that the next phase of manufacturing at high volumes can be achieved and take his business to next level. ■

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## Jeff Henderson joins Lumileds as SVP of Corporate Development



Jeff Henderson

Lumileds revealed the appointment of Jeff Henderson as Senior Vice President (SVP) of Corporate Development, effective January 8. Henderson has over 25 years of experience in numerous executive roles, most recently at Keysight Technologies.

"As our business continues to scale, Jeff will be critical to our long-term development as he will be responsible for facilitating the process of defining, supporting and executing upon our corporate growth strategy," said Mark Adams, CEO of Lumileds.

Prior to joining Lumileds, Henderson was at

Keysight Technologies, where he was responsible for leading Corporate Development for the \$4B electronic equipment, software and services business, which spun out of Agilent Technologies in 2014. Henderson has a BSEE from Auburn University, an MBA from Santa Clara University and an Executive MBA from Boston University, specializing in strategic leadership change. "My passion is helping businesses grow and maintain relationships that are vital to our company's success. I look forward to working with the Lumileds team to generate ideas and opportunities to help accelerate growth," added Henderson. ■

## Matthias Hinrichs joins Elation Professional as Product Manager



Matthias Hinrichs

Elation Professional is pleased and excited to announce that one of the lighting industry's most knowledgeable, experienced and affable professionals, Matthias Hinrichs, has joined the company as a Product Manager.

Matthias is a well-known face in the industry, having worked as a lighting and control systems product manager at Martin Professional since 2003 and prior to that as a well-respected freelance lighting director and programmer. Over the years, the self-described product designer and innovator has worked in staging, audio, as a DJ, lightjockey, in technical support, business development and finally as a product manager for lighting control and automated lighting fixtures.

"I love dreaming up great products and ideas for the lighting industry and work with incredible

teams to realise them from the napkin drawing to highly integrated manufacturing across the globe," said Matthias, who began in the new position at the start of the year. "In my new role, I am excited to be part of Elation's commitment to innovation and R&D. Unique fixtures like the recently launched Dartz 360 and Artiste Dali are great examples of Elation's technological advancements."

Elation President Toby Velazquez is thrilled to have such an impassioned lighting pro join the Elation team, commenting, "Within the first hour of meeting Matthias I knew we shared the same passion for the lighting industry. I was convinced he could focus on the details, details, details that are critical to LD's and our customers and a key to helping them be successful!" ■

## Paul Alger joins Universal Lighting Technologies



Paul Alger

Universal Lighting Technologies, Inc., a well known leader in lighting and a member of the Panasonic Group, has announced the addition of Paul Alger as a regional sales manager covering Nebraska, Kansas, Iowa, Missouri and Southern Illinois. Alger has a strong track record of sales success, growing market share, developing accounts, and driving new product sales. In his new role, he will be responsible for developing and executing sales plans to gain market share and grow sales for regional agent and distributors. He will focus on increasing awareness and growth of the EVERLINE LED Retrofit products, in addition to the company's standard core distribution products. Alger will be based in DeKalb, Illinois.

Donna Taylor, Universal's Central Region Vice

President, said, "Paul's broad experience working with key distribution customers will play an integral role in growing Universal's market share in his territories. His success working for manufacturers and selling through distribution and agents to develop strong business partnerships will be an asset for our customers, as well as our company itself." Alger brings more than two decades of diverse industry experience in the commercial lighting and electrical distribution industry. He has opened new markets, developed chain and distributor branch partners, worked with buyer groups and delivered results for a multitude of key accounts. Before joining Universal, Alger held a national strategic account sales position and served as director of sales and marketing for more than five years. ■

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## Bradford wins prestigious lighting award

A project by Bradford Council, that has transformed a key gateway into the city centre, has scooped a top national award, beating off stiff competition from projects including London's famous Oxford Street and the affluent district of Kensington.

The old railway arches in St Blaise Square, which is next to Forster Square railway station, have won the Outdoor Lighting Project of the Year Award at the Lux Awards - which recognise the best lighting projects from across the country.

The LED lighting scheme was installed in 2015 as part of a series of improvements, by the council, to the pavements and pedestrian areas across the city centre including around the then newly opened Broadway



Shopping Centre. This work was funded through the regional Growth Fund and the City Centre Growth Scheme.

The concept for the lighting design was to make the area an attractive environment and give people a warm, colourful and playful welcome along a main thoroughfare for commuters and shoppers accessing the city centre via

Forster Square railway station.

The scheme's key innovation is the use of 64 LEDs which are recessed into the block paving at the base of each arch wall illuminating the ten heritage railway arches. Four LEDs have also been recessed in a raised planter amongst trees in the area.



## Buster + Punch's LED BUSTER Bulb wins 2017 GOOD DESIGN award

Buster + Punch, a London-born home fashion label, who work with unexpected materials and solid metals to make lighting, hardware, custom motorcycles and whisky bars, is pleased to announce that they were honoured with the 2017 GOOD DESIGN award for their LED BUSTER Bulb. The LED bulb signifies the first radical redesign of the 'Edison style' bulb, making it energy efficient and highly functional. GOOD DESIGN is the world's most prestigious, recognised and oldest Design Awards program, which is organised annually by The Chicago Athenaeum Museum of Architecture and Design in cooperation with the European Centre for Architecture, Art, Design and Urban Studies.

"This year's historic 67th GOOD DESIGN program recognises the work of thousands of designers and



manufacturers worldwide who have successfully undertaken the design challenge to produce the best and most outstanding design products across the globe for our large and expanding global consumers," stated Christian Narkiewicz-Laine, President,

The Chicago Athenaeum.

For 2017, the museum received submissions from several thousand of the world's leading manufacturers, renowned brands and industrial and graphic design firms from around the world, representing the most important, influential corporations globally in the design industry from over 48 countries. GOOD DESIGN represents the world's critical mass of the design and manufacturing industry, representing the best consumer design ranging from the 'spoon to the city'.



## Schröder Swiss wins the Watt d'Or Energy Prize

The Watt d'Or prize is awarded annually by the Swiss Federal Office of Energy to recognise five outstanding energy projects that benefit to society. The objective is to highlight extraordinary achievements in the energy sector, and by doing so, to motivate business, politicians, and the public to explore the advantages of innovative energy technologies. The 2017 competition received 71 submissions, a demonstration of how innovation is thriving.

At the prize ceremony, which took place in Berne on January 11th, Schröder Swiss won the award for the Energy Technology category in collaboration with the Zurich utility company



(L2R) Thomas Blum, General Manager of Schröder Swiss and Jörg Haller, Head of Public Lighting at EKZ

(EKZ). Together, they installed a new lighting system that embodies smart lighting by ensuring the safety of residents all the while protecting local wildlife and reducing energy consumption.

Even though lighting systems incorporating motion detection sensors already exist, EZK wanted a solution that would adapt lighting levels based off the traffic density. With Schröder, they decided to carry out a one-year pilot project over a 1-kilometre stretch on a main road in the town of Urdorf.

A luminaire was fitted with an optical sensor that captures data regarding traffic density and sent to a control system.



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# Thorn Luminaires add a fresh look to the newly refurbished City, University of London

The aim of the refurbishment was to create a new main entrance complex, improve circulation and expand student facilities at the Northampton Square main campus. Architects NBBJ worked closely with the University to transform the estate. The aim was to adapt the structure in a way that it stays true to its original concept.

Thorn Lighting has created a solution for the redesign of the City, University of London that has resulted in a stylish installation, with maximum performance, low maintenance and high energy savings. Working closely with Halsion Building Services Engineers, the lighting scheme has been transformed into an eye-catching, modern installation that works in harmony with the new, refreshed facility.

City, University of London is a public research university based in the heart of London which contributes significantly to the Capital's academic, cultural and business life. The aim of the refurbishment was to create a new main entrance complex, improve circulation and expand student facilities at the Northampton Square main campus. Architects NBBJ worked closely with the University to transform the estate. The aim was to adapt the structure in a way that it stays true to its



Equaline surface mounted creates a friendly and bright atmosphere in the room, perfect for workshops, presentations or learning groups.



Thorn's Novaline ensures that the right lighting levels are met for a safe stairwell illumination.

original concept. The scheme incorporated the main University building, the hub building and a new pavilion that integrates sensitively into the Northampton Square and Hat and Feathers' Conservation Area. The design 'celebrates' the dramatic concrete structure of the original 1960s University Hall, now seemingly floating above the newly created arrival space. Converted into a Harvard style lecture theatre it offers carefully calibrated acoustics and natural light.

Thorn's Equaline Linear LED luminaires light up the main areas of the building. The combination of sleek design and very good glare control, creates a pleasant environment for the students and teachers passing through the buildings. Equaline offers flexible mounting possibilities and the architects opted for recessed, surface mounted and suspended versions for the University.

City, University of London is committed to embedding sustainability within all of its activities so for circulation areas, Thorn's Chalice was an obvious choice as a direct LED replacement to conventional fluorescent downlights. The replacement does not only reduce energy usage by up to 60 percent but also reduces maintenance demands and therefore further costs.

Photo Credit: Thorn





Equaline is also suitable for higher ceiling heights such as in auditoriums.

As a one for one replacement for single and twin T8/T5 fluorescent battens, Thorn's PopPack LED has been installed in circulation areas. With a total load of only 28W, 41W and 60W, PopPack can achieve energy savings of up to 67% when compared to traditional switch start. Novaline, with its slim circular design, blends in perfectly with the building design and provides the right light levels for the stairwells. The ultra slim Voyager LED exit sign has been installed throughout the narrower areas of the University, providing guidance and safety. Easy to install, Voyager has a three hour duration of maintained or non-maintained operation and interchangeable legends.

Thorn's Olsys has been used for the illumination of the exterior of the facility, offering a wide range of configurations to suit the task and the environment. Designed in accordance with the EN 60598-2-13 contact temperature norm, Mica luminaires add additional illumination to the surrounding of the building.

Ingo Braun, Design Director at NBBJ said, "By upgrading this iconic brutalist building and removing some of the accretions of past decades we've given it a new lease of life and secured its future within City, University of London's main campus, opening it up to a growing and changing audience. The new entrance and route through the building has transformed the building and underlines City, University of London's position as a leading, global institution." ■



Modern and welcoming circulation areas invite students to come together in-between and after classes.

Source

[www.thornlighting.com](http://www.thornlighting.com)



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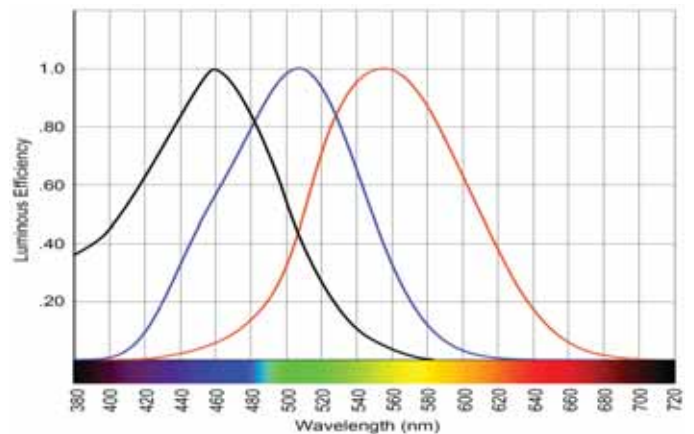


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# The Future of LED in Streetlighting

The advent of High Pressure Sodium Vapour Lamp (HPS) around 1970 happens to be one of the most desirable and adorable light source for streetlighting. The warm colour (CCT between 2700K to 3000K), quite high CRI, contrast enhancement and retrofitting capability put HPS on advantageous position over its predecessors.

Candles inside glasses to William Murdoch's gas lighting in the late eighteenth century were the concept of streetlighting for over 200 years. It is only in 1880 that Wabash, a small town in Indiana in USA, earned the distinction of becoming the first electrically lighted city in the world. When automobiles started rolling out and flourishing in early twentieth century, a street with electrical lights came to be referred as 'White Way' – like New York's Broadway was nicknamed the 'Great Whiteway'. Streetlights then used incandescent and low pressure mercury vapour lamps more popularly referred as fluorescent lamps. Streetlight luminaires with High Pressure Mercury Vapour lamps took over from early 1950 and lasted over two decades. It never gained popularity as the bluish green colour made people look like they had the 'blood drained from them'. The same fate faced Low Pressure Sodium Vapour lamp (LPS) during that time. Although the most efficient discharge lamp in terms of its efficacy, people under LPS



looked all dark like 'ghosts'. The advent of High Pressure Sodium Vapour Lamp (HPS) around 1970 happens to be one of the most desirable and adorable light source for streetlighting. The warm colour (CCT between 2700K to



Canal way enroute San Marco Plaza with outdoor LED luminaires





Venice Canal way with all outdoor lights converted to LED

3000K), quite high CRI, contrast enhancement and retrofitting capability put HPS on advantageous position over its predecessors. Till date its popularity has not waned. Even after over four decades of existence this conventional lamp commands stronghold over major streets across the globe. Apart from assisting motorists, streetlight's contribution to public lighting plays a major role on psychological behaviour of human beings by inducing warmth, harmony and also sense of security and confidence. So in order to assess the quality of streetlighting, a basic understanding of seeing process is important.

The process of seeing is through optical pathway in a human eye which is connected to the visual cortex (part of the brain which mediates the sense of light) via a nervous system. The nervous system is made two types of receptors like rods and cones. These, in turn, contribute to 3 types of image forming functions, and are important for normal daily function and life quality. The visions are 1) SCOTOPIC (rod), where the field luminances lie between  $10^{-6} \text{cd/sqM}$  to  $10^{-2} \text{cd/sqM}$ . This is a vision in the darkness where the world is grey and without colour sensation; 2) PHOTOPIC (cone) – coloured vision with luminance above  $10 \text{cd/sqM}$ ; 3) MESOPIC – Most important vision where the field luminance is raised upwards from  $10^{-2} \text{cd/sqM}$  to  $10 \text{cd/sqM}$ . With luminance moving up the luminosity of red increases more strongly than that of blues due to changing contributions of rods and cones receptors. Known as Purkinje phenomenon, this is an important aspect for designing effective road lighting, as it takes into account the luminance concept as well as

neurological aspects of road lighting.

For over four decades, colour corrected HPS streetlights have complied closely with Mesopic vision. Today, despite several advantages of energy efficient LED light source, there are a lot of hurdles to overcome before it is able to take over HPS in streetlighting. One of the major hurdles is retrofitting the HPS streetlighting and replacing the lamps with LEDs of CCT 2700K to 3000K. Once this can be achieved upgradation of existing streetlights will save energy upto 80%, produce better light colour stability and can be dimmed to adjust to the traffic load.

Osram has recently set up a new LED chip factory at Kulim, Malaysia to produce high power chips and light engines to meet the retrofitting requirement. Osram is also expanding its capacity in Wuxi, China for producing LED with housing and partly with primary optics too.

The canal ways and Piazza San Marco in Venice, Italy has been upgraded with LED using the vintage luminaires. The look and feel of bygone era has been retained while reducing energy usage by 80%. Around 7000 luminaires have been retrofitted with LED. This has been completed in 2017. ■

Location: Venice; Photo Credit: Biswajit Sengupta



Biswajit Sengupta  
Lighting Consultant

# Lighting with LEDs

The LED as a highly efficient and digital light source has triggered a rapid change both in the lighting industry and also in the implementation of illumination. With a common light yield around 120-140lm/W in realistic operation the LED already surpasses all other high-grade luminaries in general lighting. In the coming years the light yield will increase up to around 200 lm/W. At the same time the life span of 50,000 hours outperforms conventional luminants by far.



**L**ight is more than just vision. It includes aspects of well-being, health and emotions. At the same time our knowledge about how lighting affects people has increased significantly. Light emitting diodes (LEDs) as a digital light source offer new technical possibilities for fulfilling special visual, biological and emotional requirements. LED lighting products produce light approximately 90% more efficiently than incandescent light bulbs. LED lighting is finally coming of age, but many of us are still nervous of this relatively new technology. Lots of people tried LED lighting when it was first available and it often produced dim, cold puddles of light. Those memories still persist, so in fact a lot have to be done to pursue people that this is no longer the

case. There are available a selection of LED bulbs with the range of colours, brightnesses, fittings and so on. That way we can get what we want without making costly mistakes and compromising on lighting outputs. To prevent performance issues, the heat LEDs produce is absorbed into a heat sink. LEDs emit light in a specific direction, reducing the need for reflectors and diffusers that can trap light. This feature makes LEDs more efficient for many uses such as recessed downlights and task lighting. With other types of lighting, the light must be reflected to the desired direction and more than half of the light may never leave the fixture.

## LED Lighting

Instead of initial high cost factors, LED lights are on track to be the dominant form of lighting in the times to come with many advantages and only a few limitations. Efforts are going on to improve the LED lighting systems with a great expansion in their applications horizon. Global adoption of LED lighting technology can help save billions of dollars in electricity costs by diminishing lighting loads. With the use of LED lighting, diminished heat build-up in homes and offices can also diminish the need for air conditioning, further lessening demand for electricity. Modern LED technology is intersecting with the Internet of Things (IoT), assigning IP addresses to individual lights to allow lighting control through a smartphone app. It's another step toward the smart home, in which users can control everything—lighting, heat, appliances, security features—from anywhere by the simple

Table 1: Pros and cons of LEDs

Pros	Cons
<ul style="list-style-type: none"> <li>• Are far more energy efficient</li> <li>• Require less power</li> <li>• Are often more portable</li> <li>• A predominant feature for LED lights is that they only heat up to a fraction of the temperature.</li> <li>• Eable an (almost) infinite variety of colours to be produced</li> <li>• LEDs can also emit light of a certain colour without using colour filters</li> <li>• They can be very small and can be easily attached to printed circuit boards</li> <li>• They also light up very quickly and are ideal for frequent on/off cycling</li> <li>• LEDs are difficult to damage with external shock</li> </ul>	<ul style="list-style-type: none"> <li>• Sometimes the colour cast can be distasteful from cheaper models</li> <li>• Multiple non-diffused LEDs from different brands may cast incoherent colours and unwanted shadows</li> <li>• Cheaper LED's may also cause a flicker when their batteries are starting to die</li> </ul>

touch of a button. Pros and cons of LEDs can be summarised as shown in Table 1.

### Applications of LED Lighting Systems

We need a product we can trust and will produce a good clean light for years to come and save money in the process. The LED market is highly saturated with manufacturers and distributors offering various levels of quality, cost, and specifications. LEDs are commonly used as indicator lamps in many devices but are also increasingly used for other purposes as well. Around the house, LED lights can be used as accent details for cove lighting or for highlighting a certain décor or architecture feature. They can be used to highlight a certain area such as the space underneath or above the cabinets, bats, sofas, tables, etc. They can also be used for cove lighting and can create a very interesting effect, especially at night. LED lighting is currently available in a wide variety of home and industrial products, and the list is growing every year. The rapid development of LED technology leads to more products and improved manufacturing efficiency, which also results in lower prices. Below are some of the most common types of LED products.

#### LED lighting panels

LED panels are becoming more popular than ever as they are extremely convenient, efficient, and easy to set up. But at the same time, there are some undeniable downsides to working with them. Certain LED panels can cause colour casting in footage, they are prone to flickering, and the quality of light itself isn't as pleasing to the eye as tungsten or HMI lighting until it is modified. With all that the benefits of shooting with LED panels outweigh the negatives. They are so light and portable and can effectively allow shooting well in nearly any situation. In years past, to capture a night scene in a really dark exterior environment there was no choice but to rent a generator. Working with generators is cumbersome, costly, and very noisy. LED panels, on the other hand, can be



powered with a single V-Mount battery, which in turn solves the sound issue. Not to mention they stay cool when working with them, making adjustments and teardown a breeze. Here are some tips for working with LED panels. Some of the performance issues with LED panels can be highlighted as:

#### LED dimmers

As the LED gets dimmer and dimmer, there comes a point when it just cuts out (switches off). With cheaper fittings, this cut off is more pronounced and more visible. LEDs work successfully in lights with dimmer switches where many energy saving bulbs do not. Need is to get the dimmer switch changed to a 'leading edge' or LED compatible dimmer. This is because they handle much lower loads. Some bulbs have built-in circuitry to manage dimmers. They are no more expensive than 'regular' dimmer switches. Most LED panels these days have the option of dimming down the brightness, which is an excellent feature to have when it works. The problem however, is that dimming doesn't always work well and many LED panels are prone to flickering when they aren't running at full blast. Some of the higher end LEDs does a phenomenal job of maintaining consistent brightness when dimmed down to any level, but at the same time, a lot of LED panels do suffer from this issue. Sometimes the effect is so subtle that we almost don't even notice it while shooting, but then in the editing room it becomes apparent. Although the LED fitting is connected to a control signal from the lighting desk, the electronics in many cheaper LED fittings do not allow them to dim completely smoothly, resulting in a 'stepped' dim, rather than a smooth seamless dim.

#### A modifier

LED panels (like many other light sources) don't typically generate very pleasing results when used directly. In other words, to simply flick on LED panel and point it at any talent, the overall quality of the light probably isn't going to be what we're looking for. Many corporate videos, events, and other lower budget productions mistakenly shoot this way with LED panels, and their footage can look very cheap. Instead, be sure to always use a modifier to soften up the light.

#### Flickering

Incandescent (filament) light bulbs have a relatively slow heat up / cool down time. The light fades (over a fraction of a



second) when we cut the power. However, with an LED, the light cuts off completely and instantly as soon as the power is removed. LED lights at 100% do not flicker noticeably, but as they are dimmed electronically, the flicker is visible to a video camera (if not to the naked eye). If an LED colour (in a cheaper fitting) is kept at a low level, the flicker will be very noticeable on video recordings. The higher the refresh rates of the LED, the faster (and less visible) the flicker. The flicker rate is measured in Hertz (Hz) – cycles per second. All LED panels are not made alike – especially when it comes to flickering. That same notion applies to other aspects of the lights as well, such as build quality, features, and colour casting.

#### **Colour casting**

LED light can appear cold and harsh – it lacks the warmth and subtlety of tungsten lamps. It seems to be another major issue for many panels. Much like fluorescent lighting, LED panels are often prone to outputting light with a slight colour cast that can make skin tones and other elements read strangely on camera. Colour correction can fix this to some degree, but for shooting with LED panels regularly it would be far better to actually have panels that don't suffer from this issue.

#### **Colour temperatures mixing**

Many newer LED panels today give the option of mixing colour temperatures between tungsten and daylight. In other words, they will have two separate sets of LED bulbs (one tungsten colour, one daylight colour), and can not only choose to use either of them, but can use both in unison with each other. This is an amazing feature to have, but at the same time it is one of the most frequently abused features on LED panels.

#### **LEDs in a stage lighting**

LED fixtures designed for entertainment use are not the same as regular stage lights. They must not be connected to

a dimmer. The electronics that run and control the LED fitting are built into it, and require a constant undimmed power source. A control signal must also be connected to each LED fixture, which comes direct from the lighting desk. Some LED fittings are single colour, but most contain LEDs which can produce Red, Green and Blue light independently. These LED fixtures are known as RGB, and enable a wide range of colours to be produced on stage by mixing them together in varying amounts.

#### **LED lighting strips**

The use of flexible LED strip lights is rapidly rising in modern lighting design around the world. Architects and lighting designers are implementing LED strip lights into residential, commercial, and industrial projects at an increasing rate. This is due to an increase in efficiency, colour options, brightness, and ease of installation. A homeowner can now design like a lighting professional with a complete lighting kit and an hour or two. There are many options on the market for LED strip lights (also called LED tape lights or LED ribbon lights) and there is no clear-cut standard for how to choose LED strip lights. An LED strip light is a flexible circuit board that is populated with LEDs that can stick almost anywhere to add powerful lighting in a variety of colours and brightness.

#### **Restaurant & Bar LED Lighting**

LED strip lights provide a long list of benefits for restaurants of any variety, from small cafes to five-star eateries. They are aesthetically superior to traditional lighting, reduce monthly energy costs, and last up to 100 times longer than standard incandescent bulbs. Increased product development in recent years also means lower initial costs and easier installation, meaning inexpensive use of LED strip lights for bars and restaurants, particularly in dining rooms, lounges, or kitchen areas. LED strip lights provide highly





elegant illumination in a three different tonal ranges; Natural White and Warm White options are particularly popular in commercial applications. LED strip lights come in a variety of single colours as well as versatile RGB, and these are great for creating a customised lighting experience in restaurant or bar. Since LED strip lights can be curved, cut, and connected to fit virtually anywhere, they provide attractive indirect lighting underneath countertops, around bar backs and even in hidden corners and alcoves. Another important advantage is that LED lights produce no excess heat, which further contributes to energy efficiency and makes them perfect for use in kitchens.

### Cabinet & Ceiling LED Lighting

Adding high quality indirect light can bring almost any room to life, something astute designers and homeowners everywhere are discovering. Installing above cabinet LED strip lighting is a popular way to achieve this – it's a simple, do-it-yourself project that will dramatically improve the visual appeal of any space. Indirect LED lighting provides a generous, warm glow that is strongly preferred over direct overhead lighting fixtures and bulbs. Small, versatile LED strip lights can be subtly attached to the top of any cabinet to provide a beautiful indirect light source without visible wires or components. It's a perfect way to illuminate kitchen, dining room, or any above cabinet area in the office. Similarly, composed of a ceiling web of circular LED units, patterns and moods can be drawn into the ceiling via the light wand, which communicates with the sensor inside the LED unit. Users can set the light type as well as the colour for each unit across the whole ceiling.

### Problems with LED lighting

The lighting industry is competing in terms of efficiency and new records are set frequently. The inconsiderate usage of the technological possibilities involves the danger of creating useless or very bad solutions that in the end raises questions about the complete technology. For example, the combined spectra of several LEDs entail the risk of being perceived as bad colour quality, or specific surfaces may seem unnatural. The combining of different colour LEDs can lead to irritating colour shadows, or the commonly used pulse width modulation (PWM) for dimming the LEDs can generate disturbing flicker effects with moving parts. The extremely high light density of high power LEDs can produce uncomfortable light pressure and strong glare in the radiation field. The quality criteria stated in relevant harmonised standards that are used in lighting engineering, are not suited for this kind of LED illumination. The LED is, at present, a product that is outperformed by a better LED within months. But at the same time it has a life span of several decades. All this generates large uncertainty with handlers and consumers and makes long term planning difficult. To use the potential of LED-technology in a positive way for the end-consumer, new rules (technical but also qualitative standards) are needed. The requirement, therefore, is, amongst other things, the establishment of new quality criteria to quantify these benefits.

### Colour Rendition

Colour rendition (colour rendering index, CRI) is an important spectral quality criterion of a light source. This index tells us to what degree colours are rendered correctly in comparison to a reference light source (daylight or thermal



radiator) when illuminated by an artificial light source. The early LED generations often had CRI values of less than 80 and thus did not meet the requirements stipulated in the standards for interior lighting. At the same time, it has been noted that the colour saturation of objects illuminated by LEDs, at least in part, appeared to be considerably stronger and also more appealing.

#### Dynamic artificial lighting

Generally dynamic lighting varies the lighting level, the distribution, and the colour temperature of an interior space. The transition of the lighting parameters occurs slow enough to be below the awareness threshold (subliminal) mostly lasting more than 15 minutes. The primary objective of dynamic lighting is either controlling artificial lighting in the interior subject to the time of day in order to facilitate certain specific non visual effects of light on mood, sleep, cognition and physical activity or supplementing missing natural light with artificial light with the aid of sensors in order to increase visual comfort and to establish an energy efficient means of adding artificial lighting. Currently the scientific evidence regarding the non-visual effects of dynamic light is quite limited. From a technical point of view, dynamic interior lighting can either be realised by mixing different colour LEDs with / without a white LED (RGB- respectively RGBW mixing) or by mixing white LEDs of different colour temperatures. Although the chromaticity coordinates of the resulting spectral distributions can be kept close to the black body radiation (Planck's law), this method of mixing light does not represent a quality criterion for dynamic lighting per se. It is recommended to also spectrally evaluate the mixed spectrum by means of updated colour rendering computation methods.

#### Flicker

Flicker is the temporal modulation of the luminous flux of a light source and can be visible or invisible. Flicker can induce epileptic seizures, headaches, fatigue, eyestrain, blurred vision, migraines, and distraction; reduce visual performance and altered perception of moving objects. Flickering light matters in applications with fast moving objects, where eyes have to move quickly (e.g. while reading or searching) and where video cameras are used. From a technical perspective flicker can be described in terms of its modulation frequency, modulation amplitude, DC-component, duty cycle and modulation waveform. The quantity of flicker for LEDs strongly depends on the used electric components and on the operating conditions (e.g. dimming). At the moment these details are not specified neither for LEDs and ballasts nor for LED luminaires and thus it is difficult to decide on the quality of products concerning flicker. Application-related factors which modulate the impact of flicker are the duration of exposure, stimulated retinal area, location in the visual field, brightness of the flickering light source, and local luminance context of the light source to its surrounding.

#### Glare

Vision is strongly influenced by the luminance distribution

in the field of view. Especially in sceneries with objects much brighter than the adaptation level of the eye these potential sources of glare can decrease visual comfort as well as visual performance. In a working environment this reduces productivity and in other applications like traffic it might even be a threat to human life.

#### Future with LEDs

The LED as a highly efficient and digital light source has triggered a rapid change both in the lighting industry and also in the implementation of illumination. With a common light yield around 120-140lm/W in realistic operation the LED already surpasses all other high-grade luminaires in general lighting. In the coming years the light yield will increase up to around 200 lm/W. At the same time the life span of 50,000 hours outperforms conventional luminaires by far. Therefore although the initial costs for LED lighting systems are higher, due to the longer life time, the profitability outperforms that of most customary systems. The characteristic of LEDs to respond to control signals instantaneously, meaning without time delay, is ideal for usage in communication technology. The combination of LEDs with light- and movement-sensors, interconnected with complex control and regulation algorithms, turn the lighting into a smart and adaptive system that can react to alterations in its environment (time, weather, etc.) in a flexible way. A future vision is an autonomously acting "thinking" LED-luminaire, that is integrated into a higher-ranking information and communication network over the "internet of things". Merging several colour LEDs to a single spectrum, while each LED is dimmable, allows the luminous perceived colour to be set in an almost user-defined manner. In so doing, lighting systems can be fashioned with which the perceived colour, the intensity and the light distribution can be dynamically modified for each use case or individual requirement. LED-technology in cooperation with communication technology offers new possibilities for high grade and individual lighting solutions. To create a sustainable benefit for the users, generally acknowledged criteria must be set up, with which the new qualities of light can be assessed and measured. Furthermore, the non-visual effects of light on the human being must be better understood to be able to create "healthy" light. The lighting community is facing the unique challenge of changing the value of lighting in society from an understated and cheap topic to an important and well-noticed issue regarding life quality, health and life style. And, without any doubt the LED-technology provides the potential to cover the increasing need for light while at the same time reducing energy consumption. ■



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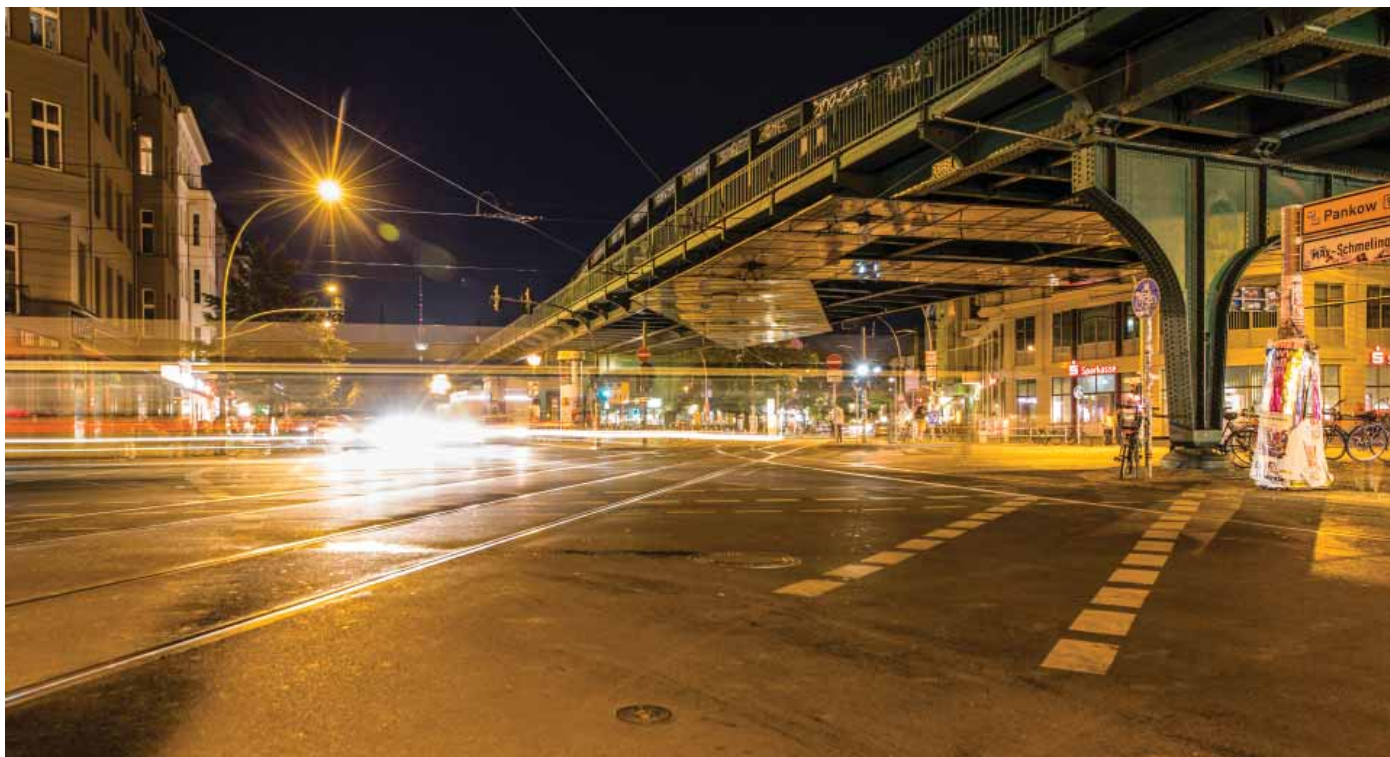
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# The Global Installed Base of Smart Street Lights to reach nearly 73 Million by 2026

Using smart street lighting networks as a platform for other smart city applications is creating new revenue opportunities for all stakeholders



**A** new report from Navigant Research analyses the evolution of smart street lighting technology and market trends, providing global market forecasts of smart street lighting hardware, software applications, and services, broken out by segment and region, through 2026.

The vision of a city lighting network is one that provides a platform for a range of innovative smart solutions in addition to efficiently illuminating public spaces. By combining advances in energy efficient lighting with new technologies and sensors, smart streetlights can help cities increase efficiency, raise additional revenue, keep residents safe, improve sustainability, and attract new residents and businesses.

Ryan Citron, research analyst at Navigant Research, said, "With LEDs established as the technology of choice for street lighting upgrades, the next frontier for smart street lighting networks involves rapidly increasing deployments of controls technology and a transition to being utilised as a broader platform for smart city innovations. Sensors and other technologies are being added to smart street lighting networks to offer a multitude of new city services, including

gunshot detection, air quality monitoring, electric vehicle (EV) charging, traffic management, and smart parking, among others."

Smart street lights also offer increased energy and maintenance savings as well as new opportunities for new revenue, according to the report. Services related to streetlight infrastructure, such as EV charging and broadband coverage can mean additional income for suppliers, cities, and utilities alike.

The report, *Smart Street Lighting for Smart Cities*, analyses the evolution of smart street lighting technology and market trends, with a focus on how smart street lighting can be used as a platform for additional smart city applications. The study analyses the drivers for the transformation in the lighting market, including financial, environmental, and economic factors, and assesses approaches to smart street lighting in different regions. Global market forecasts of smart street lighting hardware, software applications, and services, broken out by segment and region, extend through 2026. The report also examines significant smart street lighting projects and case studies of major deployments from around the world, as well as the competitive landscape. ■





**“Indians are now aware of international décor trends and they prefer contemporary settings”**

**S.T. Unicom Pvt. Ltd.** is a leading name in designer furniture, décor & lighting in India. Over the past 20 years, the company has redefined the organised luxury furniture and decor market in India. Over the last ten years it has partnered with many world acclaimed designers to bring the best of their collection to India exclusively. It currently, brings almost 30 international design, décor & lighting brands to cater to the changing lifestyle requirements of contemporary Indians. **Navin Kanodia, Interior Stylist & Creative Director, S.T.Unicom Pvt. Ltd.,** talks to **Lighting India** about his company and the industry.

**Q** When did you launch your company? What prompted you to step into this décor and accessories business?

**A** S.T. Unicom was launched in 1995. In 2000, it ventured into decor and accessories segment and in late 2000, the company came up with its current format with a portfolio of more than 30 international decor brands from across the world.

Over the last decade there has been a phenomenal change in the interior and decor market in India. Home improvement sector has witnessed high demand. Indian consumers are now aspiring for the global trends and designs and spend on home and living has gone up. With our years of understanding and expertise,

we decided to bring a choicest selection of international brand to cater to the needs of our discerning customers.

**Q** What does your company specialise in? What does it offer to make modern living better?

**A** We specialise in bringing the very best of international furniture, decor & lighting brands in India. Currently we have more than 15 international brands in our portfolio and each of these brands offer a superior design experience and quality excellence. Our portfolio includes SERIP, Goebel, Munna, Pieter Adams, Nomon, Planika, Maleras, AlexTurco, Camus, Coleccion Alexandra, Boyd, Beauhome, Kelly Hoppen, Ginger & Jagger, Thomas Bina to name a few.

Along with decor and accessories we specialise in decorative lightings. We offer a range of international brands in decorative lighting which accentuated contemporary living. In decorative lighting space we bring in brands like Pieter Adams and SERIP which are internationally coveted names and each brand offers a wide range of decorative lights that accentuates contemporary decor.

Pieter Adam is an international designer lighting brand that stands for designing excellence and perfection. With designer Pieter Adam at the helm, the brand has a bunch of highly skilled artisans and talented designers, striving to create stunning lighting pieces that also double up as perfect luxury décor accessories. Perfection is paramount in the Pieter Adam Collection. From the silk chords to the metal housing for each fitting, a Pieter Adam piece is assembled with scrutiny and passion. It can be a showpiece in your interior radiating international splendour.

Similarly, SERIP, the iconic designer lighting brand from Portugal works with the most talented craftsmen whose deep knowledge of artwork allows for personalised and bold designs. The manual bronze work and artistic glass result in stunning art pieces inspired by nature.

The brand showcased its organic Lighting chandeliers inspired by nature that gain their uniqueness for its exclusive lighting fixtures, endless colors, shapes and sizes to suit the needs of every home or project. Particular attention to detail and the unique design with precious materials, make SERIP an undertaking of organic lighting luxury. The passion for lighting and search for innovation in design demonstrates SERIP's unique point of view in the field of decoration in contrast to the mass of today. SERIP produces undertaking nature-inspired chandeliers. Organic lighting that stands out for its attention to detail and unique design

**Q As an interior stylist, what is your opinion about the latest decor lighting trends in India?**

**A** Lights are crucial when it comes to decor and its importance has grown significantly in Indian home decor market. Modern decor enthusiasts are increasingly using decorative lights to create a focal point in the interior space and to add a personalised touch to it. Indian customers are now well aware of the global designers, trends and they aspire no less. In terms of trends, contemporary decorative lights, globally organic

theme inspired lighting pieces & exquisite materials are being appreciated and the trend is same in India as well.

**Q How important is decorative lighting in décor?**

**A** Decorative lighting is a one of the most integral elements of modern decor. It can make or break the theme. It adds dynamism to the décor and creates a personalised ambience. Decorative lights a focal point in the space and gives a break the monotony of contemporary, linear settings. While minimalism prevails in modern decor, decorative lightings are a great way to introduce maximalism in the space.

Over the last decade there has been a phenomenal change in the interior and decor market in India. Home improvement sector has witnessed high demand. Indian consumers are now aspiring for the global trends and designs and spend on home and living has gone up.

**Q Which are the different categories in decorative lighting market?**

**A** Decorative lighting has various segments which include chandeliers, pendants, wall sconces, floor lamps, ceiling lamps, bracket lights, table lamps and so on. Especially organic luxury lighting are in vogue.

**Q How big is the décor lighting market in India? Which are the emerging categories to watch out for?**

**A** It is difficult to comment on the market size as the sector is still in a nascent stage. However decorative lighting sector is going to have a great run owing to the boom in urban housing sector. In terms of categories Indian market is now following the international trends in decorative lighting. In terms of categories major emerging categories metal and blown glass is going to have a major market here.

**Q How do you define the lighting (decorative) market in India in the coming years?**

**A** The perception of people has changed towards decorative lighting. Indians are now aware of international décor trends and they prefer contemporary settings. The customer today understands that decorative lighting serves both aesthetics & function. Decorative lighting is also being considered as an object of statement or an art piece. There are more designers in India who are now coming up in this sector than ever before and designing lights. With urban peripheries expanding, decorative lighting will continue to see a double digit growth in India year on year. ■





**“Yes, the legacy continues for the vision and standards...”**

**Anil Bhasin, Senior Vice President of Havells India** speaks to *Lighting India* about the industry, company and its legacy that lives.

**I believe ‘Havells India’ has been in the market for the longest period, we would like to know about the company evolution?**

From a switch manufacturing company to our foray into various other segments such as cables, personal grooming, lighting, consumer durables and now water purifiers, Havells have come a long way.

As far as lighting business is concerned, our journey has been fulfilling. Since, our foray into the lighting business in 2004, we have emerged as one of the fastest growing lighting companies in India. With a turnover of close to INR 1200 crore, we hold about 14% market share in the overall lighting industry and the lighting segment has registered double-digit growth on a consistent basis. Ranging from consumer lighting to commercial lighting, we have products for every segment such as, area lighting, road lighting, HID lighting, industrial lighting, landscape lighting, down lighters & CFLs, LED's etc. Not just business wise, but socially also, our endeavour has been to follow our mantra of ‘making the change’ in real

sense. We clearly understand the importance of our responsibility and making efforts toward energy conservation and reducing environmental hazards. This is testimony to our values and sincerity towards the environment that we strategically decided to stop manufacturing GLS (Global Light Source) tungsten fitted lamps and instead of it invested in energy saving manufacturing CFL (compact fluorescent lamp) lamps.

Building upon the philosophy of continuously upgrading our products to serve discerning modern consumers, we introduced India's first Green CFL lamps, which are more environment friendly than the CFL lamps available in the market then. The next phase came when Havells successfully introduced one of the widest range of LED lights to serve the purpose of all spaces like home, offices, showrooms, factories, street lights etc. We were also the pioneers to introduce energy efficient Tube Lights which saves up-to 40% of energy.

The year 2007 was a big turning point for us when we

acquired world renowned Sylvania Global, which was one-and-a-half times bigger than Havells at the time of the acquisition. Sylvania put Havells in the global map for lighting industry. Strategically, after gaining the strength, we divested majority stake in Sylvania which was aimed at consolidating the position of Havells in the domestic market and utilise the funds for better growth prospects in future. In order to stay ahead of the market curve, we have been introducing intelligent products under lighting segment and our success can be attributed to the unique spectrum of energy efficient products which are far superior in terms of technology and user-friendliness. We are also the only company in the country to have a large scale lighting fixtures plant in the country situated at Neemrana, Rajasthan through which we are manufacturing innovative and globally acclaimed products. Going ahead, we expect lighting business to be the growth engine for Havells.

#### Could you tell us about the business before and after inheritance? Does the legacy continue further?

Havells is a fine example of transforming from being a family run business to a professionally run business. Yes, the legacy continues for the vision and standards that our founder has set for us. It is the vision that has helped the company to evolve into a global brand foraying into new product categories, stitching new partnerships and deepening of marketing and sales network. I, lead a team of motivated professionals who bring in the new age thought process and most importantly innovation for our products. This mix of talent and vision of our founders have been instrumental in transforming the business into a run global brand that is renowned for its technology, innovation, customer friendliness and product range. Professionals who are veterans in their own domain run the company's business verticals. The whole set up is now professional and innovation driven and the company has adopted new structure of Strategic Business Units (SBUs), which has resulted in better governance with focus on growth.

#### What are your insights about the future of your business (lighting) into this market (current scenario)?

We are extremely optimistic about the future of our lighting business in this market on the back of the govt's positive initiatives like UDAY, UJALA, Smart Cities and Power for All which have been undertaken to improve the power sector in India. We are also bullish on the government promoting the use of energy-efficient LED products and greener fuels. And, in order to tap the growth potential in the power sector in India, we have already enhanced our manufacturing capabilities from 5 lakh lamps to 25 lakh lamps per month, so that it not only assists the government's plans for increased efficiencies in the power sector, but also puts Havells in a position to benefit the maximum from this. With a dedicated state-of-the-art in-house huge production facility for fixture

manufacturing, we at Havells are all set to support Government's initiatives. We have also started the process of phasing out the CFL's and focussing on the manufacturing of LED lights which have huge growth potential and currently contribute 75% to our lighting division's turnover.

Apart from this, we are launching innovative lighting solutions such as Power of Ethernet (POE), Smart Street Lighting Led Solutions & Indoor Light Automation which will bring new era of efficiencies and savings in lighting usage and consumption. We have also launched two affordable lighting products for retail consumers 'Tyrica' and 'Quadra Glow'. Also, we have recently bagged large scale projects from government entities and are also making a big foray with private sector conglomerates. We are operating in segments like-Government, Industry, Commercial Spaces, Retail, building façade, etc. and creating milestone with latest state-of-the-art technologies.

#### How has the lighting market changed over the period of time since the company's inception?

The lighting market in India is evolving rapidly moving from conventional products to LEDs. This transition is driven by an increasing number of government initiatives for energy conservation, rising consumer awareness about energy-efficient products and innovative products and solutions offered by the companies that are in sync with the overall trend of technology and digitisation. The lighting market is expected to grow tremendously even in the long run on account of the demand for a smart, connected lifestyle and for energy-efficient products. Lighting was earlier being used only for illumination purpose. But with evolving lifestyle changes and consumer preferences, lighting has now become an integral part of the home décor. People, nowadays prefer more elegant, decorative and aesthetically appealing lights and lighting fixtures which harmonises with the interiors of the house or commercial places. Lighting systems today add to the aesthetics of the wall, curtains, and other interiors and add to the beautification of a property be it a domestic house or a commercial space in a city or a town. People are now ready to spend lavishly on home décor.

#### Any piece of advice that you would like to give to the current entrepreneurs in the industry?

Businesses today are going through a vibrant phase and situations are multi-dimensional. So, the current entrepreneurs should be vibrant, inspirational and must be able to build a stronger team and enable them to perform. I would like to advice the budding entrepreneurs to open their vistas, have a clear vision and take risk because success comes to those who are willing to try and risk and fail and stand up to do it all over again. Most important is to recognise that innovation and change in technology are the two things to keep you in the competitive mode. So never compromise on changing with times and allow new ideas to bring in change. ■



# Street and Safety Lighting: Need for Improved Safety of Drivers, Riders, and Pedestrians

Street and safety lights improve visibility by reducing the glare impacts of headlights of approaching vehicles; they also improve the visibility of objects and markings on the roadway beyond the range of vehicle headlights. Europe is expected to hold the largest size of the global street and safety lighting market in the next few years...

The most important role of street and safety lighting is to prevent road accidents and also provide the necessary light for clear vision at night. It helps to improve the safety of drivers, riders, and pedestrians. Moreover, the effectiveness of lighting in preventing accidents depends on its illuminance. Brighter the lighting, better is the visibility to prevent accidents. Street and safety lights improve visibility by reducing the glare impacts of headlights of approaching vehicles; they also improve the visibility of objects and markings on the roadway beyond the range of vehicle headlights. In addition, other factors, namely the need for energy-efficient lighting systems, increased demand for intelligent solutions in street lighting systems, and increasing penetration of LED lights and luminaires in street and safety lighting drive the deployment of street and safety lighting

systems. Europe is expected to hold the largest size of the global street and safety lighting market in the next few years due to stringent government regulations pertaining to lighting efficiency followed by many European countries such as Germany, the UK, France, and Italy, while the market in APAC is expected to grow at the highest rate in the coming years.

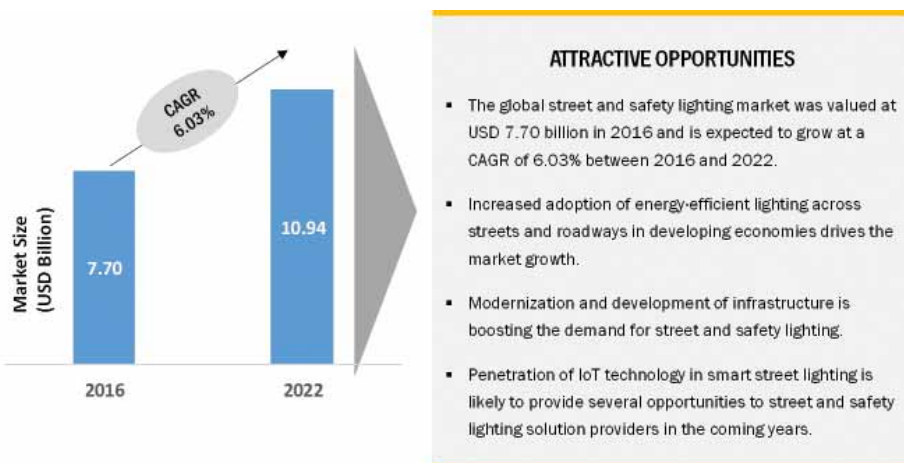
## Global Street and Safety Lighting Market Drivers

**Drivers that boost the growth of the street and safety lighting market have been listed below:**

- Need for improvement in visibility and safety of drivers, riders, and pedestrians
- Modernisation and development of infrastructure such as smart cities
- Need for energy-efficient lighting systems



**Figure 1: Decreasing prices of Light-emitting diodes and need for energy-efficient lighting solutions propel THE street and safety lighting market growth at present**



Source: American Lighting Association, Investor Presentations, Annual Reports, Press Releases, Expert Interviews, and MarketsandMarkets Analysis

- Increased demand for intelligent solutions in street lighting systems
- Increasing penetration of LED lights and luminaires in street and safety lighting solutions

**Opportunities that are likely to propel the market growth in the near future have been listed below:**

- Promotional activities toward energy efficiency in developing economies
- Development of wireless technology for street lighting systems
- Penetration of IoT technology in smart street lighting

**Street and safety lighting plays a crucial role in clear vision and avoiding road accidents as proven by some research studies:**

According to the report by the Royal Society for the Prevention of Accidents (RoSPA, UK) (2015), 25% of car drivers travel between 19:00 and 08:00; and 40% of fatal and serious injuries take place during this period. Also, a report by the Institute for Road Safety Research (SWOV) of Netherlands revealed that a relatively large proportion of nighttime accidents occur on unlit roads. Furthermore, the Department for Transport (UK) interpreted that about 63.8% respondents believed that improved street lighting would lead to fewer accidents on the roads. In 2007, the UK Highways Agency revised its

estimate of the effectiveness of road lighting for reducing road accidents from 30% to 10%. In addition, in 2002,

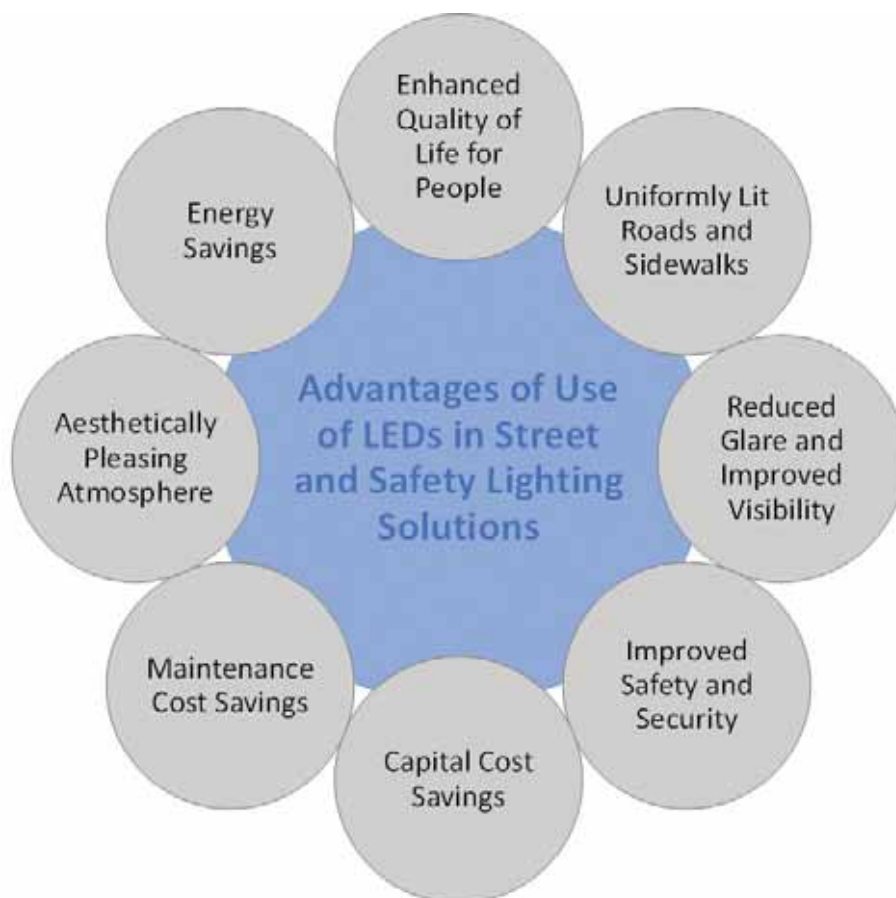
according to the Research on the Interrelation between Illuminance at Intersections and the Reduction in Traffic Accidents report, there was a 43% reduction in night-time accidents at junctions after the provision of lighting. Thus, street and safety lighting plays a vital role in avoiding road accidents and also provides a clear vision on the road.

#### **Key Competitors in the Street and Safety Lighting Market:**

The prominent players operating in the street and safety lighting market are as follows:

1. **Philips Lighting (Netherlands)** has been a leader in street and safety lighting market for a long time and has an extensive array of products that are used in residential, commercial, streets, and highways and tunnels lighting. A major advantage that Philips has over

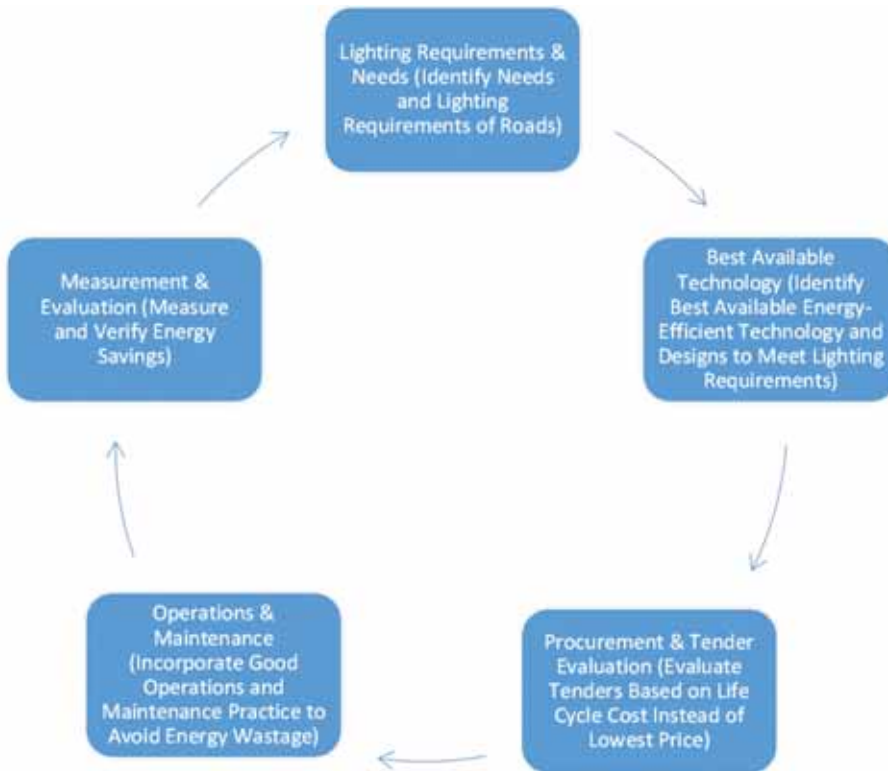
**Figure 2: Best Benefits of light-emitting diodes in street and safety lighting**



Source: Investor Presentations, Annual Reports, Press Releases, Expert Interviews, and MarketsandMarkets Analysis



Figure 3: Energy-efficient street and safety lighting project cycle



Source: United States Agency for International Development (USAID), Industry Journals, Expert Interviews, Primary Respondents, Industry Associations, IEEE Journals, Annual Reports, and MarketsandMarkets Analysis

other competitors is its extensive product portfolio. Philips offers outdoor lighting solutions for roads (streetlights and car lights), public spaces, residential areas, and sports arenas.

2. **General Electric (US)** has an extensive product portfolio of street and safety lighting solutions. GE manufactures and sells a variety of energy-efficient solutions for commercial, industrial, municipal, and consumer applications all over the world, utilising LED, fluorescent, halogen, and HID technologies. In addition, the company focuses on building connected lighting using various software platforms. GE offers a full range of lighting solutions and services for ceilings, parking lots, signage displays, roadways, sports arenas, and other applications.
3. **OSRAM (Germany)** operates through its specialty lighting, opto

semiconductors, lighting solutions and systems, and lamps business divisions. OSRAM Licht AG also provides lighting solutions and specialty products featuring energy-

saving technologies. OSRAM is one of the major suppliers of street and safety lighting under the 'lighting solutions and systems' business segment. The company has 2 subsidiaries, namely, OSRAM Opto Semiconductors GmbH (Germany) that designs and manufactures opto-semiconductor products and OSRAM Sylvania, Inc. (US) that produces and markets a wide variety of lighting products for businesses, homes, and transportation.

4. **Cree, Inc. (US)** develops and manufactures lighting-class LED products, lighting products, and semiconductor products for power and radio-frequency applications. Cree provides products for indoor and outdoor lighting, video displays, transportation, electronic signs and signals, power supplies, inverters, and wireless systems. Cree operates through 3 business segments, namely, LED products, lighting products, and power and RF products. Lighting products are used across office and retail spaces, restaurants, schools and universities, street and roadways, hospitals, airports, and parking structures. Cree, Inc. sells its products under brands such as BetaLED, LEDway, Ruud Lighting Direct, E-conolight,

#### Industry Expert Insights On Street And Safety Lighting:



Source: Investor Presentations, Annual Reports, Press Releases, Expert Interviews, and MarketsandMarkets Analysis

Kramer Lighting, Beta/Kramer, and Beta Lighting.

5. **Acuity Brands Lighting (US)** offers conventional lighting solutions as well as connected lighting control technology for consumer, industrial, and decorative lighting applications. Key offerings of the company include devices such as luminaires, lighting controls, lighting components, power supplies, prismatic skylights, and integrated lighting systems for indoor and outdoor applications. Acuity operates across North America, Europe, and Asia. The company sells lighting solutions through independent sales agents, electrical wholesalers, and sales representatives covering specific geographic areas. Products are delivered directly or through a network of distribution centers, regional warehouses, and commercial warehouses using both common carriers and company-owned truck fleet.

#### **Other Important Players in the Street and Safety Lighting Market are as follows:**

Eaton (Ireland), Kingsun Optoelectronic (China), Thorn Lighting (UK), LED Roadway Lighting Ltd. (Canada), and Hubbell (US).

#### **Key Innovators That Are Increasing Their Market Presence are as follows:**

Several new players, namely Neptun Light (US), Tapan Solar Energy (India), Tanko Lighting (US), and Sunna Design (France) are entering the street and safety lighting market.

#### **Street and Safety Lighting Market: Key Global Trends**

- A solar standalone streetlight system consists of a pole, battery bank, photovoltaic module, and LED or CFL luminaires. The use of solar power coupled with energy-efficient luminaires makes it more environmentally friendly. The configuration can be customised to the wattage and brightness required, and it can be designed for dusk-to-dawn operations with the required number of days of autonomy.

- A smart street and safety lighting system can be controlled by a remote, and it saves energy by using the precise amount of light and accurately measuring every watt used. Also, low maintenance costs and real-time fault monitoring are the key features of this system.

- LED lamps comprise a major segment of the street and safety lighting market. LED lamps are expected to offer more complex solutions, ensuring comfort, security, and flexibility to end users.

- Smart street lighting is expected to have significant potential in the coming years. The smart lighting market is growing rapidly with the growing industries and smart city projects. Until recently, illuminating the dark was the main reason for the deployment of street lighting systems. However, street lamps are expected to perform many more functions in the future. They would notify or register a change in traffic volume and feed that data into an intelligent transport system (ITS). Street lighting would be a part of a networked urban infrastructure. This acts as a driver for the growth of the smart street lighting system market.

- The market for street and safety lighting systems having lighting efficiency between 50 W and 150 W is expected to grow at the highest rate in the near future owing to the rising adoption of LED lamps with lighting efficiency of 50 W and 150 W for street and roadway lighting applications.

- The street and safety lighting market in APAC is likely to grow at a significant rate due to modernisation and development of infrastructure across various countries such as India, China, Japan, and South Korea.

- High adoption of smart street lighting for energy conservation and ecological safety purposes provides an opportunity to street and safety lighting solution service providers.

- At present, the UAE holds the largest

share of the street and safety lighting market in the Middle East as the main agenda of the Middle East Smart Lighting and Energy Summit (2017) is the transition of the lighting industry from traditional lighting to smart street lighting and the introduction of energy-efficient technologies in street lighting.

- In 2015, the Indian government announced to replace all conventional streetlights with LED streetlights since conserving power is more economical than producing more. India has 35 million streetlights that generate ~3,400 MW of energy; by using LEDs, this can be brought down to 1,400 MW, saving 9,000 million kWh of electricity annually, worth USD 850 million.
- The street and safety lighting market in Rest of Europe expected to grow at the highest rate during the forecast period owing to the rising awareness about energy conservation in countries such as Spain and the Netherlands
- Canada is likely to exhibit the highest growth in the North American street and safety lighting market is primarily due to government initiatives and increasing awareness regarding energy-efficient lighting systems in the country.
- Global market size forecast: 2013–2022 (Americas, Europe, Asia Pacific, Middle East and Africa, and Latin America) — Europe is likely to continue to hold the largest market share in the coming years.

#### **Adoption of LED Lamps for Street and Safety Lighting Applications in the Coming Years:**

LED is the fastest-growing light source across various applications such as highways, tunnels, and roadways. At present, many companies are focusing on designing LED lighting systems composed of thin films of polymers or organic molecules, which helps to create next-generation LED lighting systems that are highly efficient. The rising demand for energy-efficient



lighting systems and strict regulations pertaining to discontinuation of incandescent lamps are driving the deployment of LED lamps for various applications such as highways, streets, and roadways. Due to the high energy efficiency of LEDs, the energy savings are significant. According to the European Commission (EC), the implementation of LEDs can save up to 70% of the energy used for lighting as well as associated energy costs. Philips provided an LED lighting fixture and a small device attached to the lighting fixture that is necessary for access to a web-based management platform called CityTouch. Through the installation of this fixture, along with a device, the street lighting management system can communicate with every single LED light fixture through an individual control module. The communication between CityTouch and LED lights is established through the local mobile network.

## Applications of Street and Safety Lighting Solutions

### Highways

- High demand for energy-efficient lighting
- Implementation of LEDs on highways to minimise carbon emissions
- Need to minimise road accidents by improving visibility

### Street and Roadways

- Replacement of traditional light sources by energy-efficient sources such as LEDs
- Installation of street and safety lighting solutions on community roads for safety purposes

### Others (Bridges and Tunnels)

- Increasing use of LED street lights for providing comfort and safety to

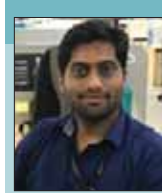
drivers, pedestrians, and riders

## Summary

The increasing need for improved visibility and safety of drivers, riders, and pedestrians and energy-efficient lighting solutions, and the rising awareness of energy-efficient and carbon-free lighting solutions are the key reasons behind the growth of the street and safety lighting market. Also, stringent regulations related to the discontinuation of incandescent lamps in countries such as the US, the UK, Mexico, and Germany is another factor that drives the adoption of LED lamps in street and safety lighting solutions. The penetration of the IOT technology in lighting solutions will make them smarter. ■



Anand Gundewar  
Analyst  
MarketsandMarkets



Shrikant Mahankar  
Senior Analyst  
MarketsandMarkets

# President of India inaugurates dynamic façade lighting of Rashtrapati Bhavan



The President of India, Ram Nath Kovind, inaugurated the dynamic façade lighting of Rashtrapati Bhavan this evening (January 19, 2018) in the presence of Union Minister of State (I/C) of

Housing and Urban Affairs, Hardeep Singh Puri and other dignitaries.

The dynamic façade lighting of Rashtrapati Bhavan has been introduced to highlight its elegance. A total of 628 light fittings have been installed for illumination of the building. Lenses of narrow to wide range are used on these fittings to spread light. A narrow beam lens has been used to highlight specific objects such as the lotus on the Jaipur Column and a wider beam lens to spread light on a larger area. Features that have been highlighted prominently in the lighting are the Jaipur Column, dome of the main building, chattris, fountains at terrace and ground level, as well as loggia columns. ■

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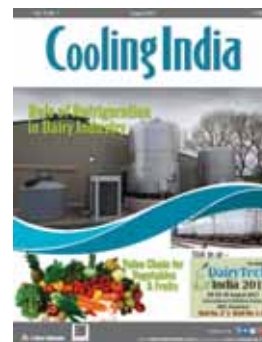
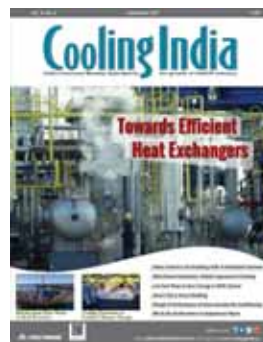
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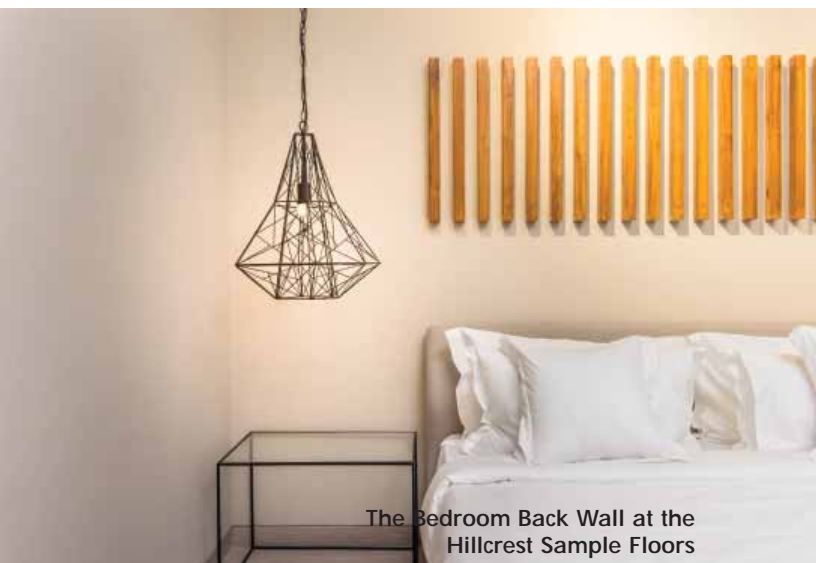


**The Hillcrest Show Floors** is designed by **'The Blue Leaves Design Group'**. Mountains & Nature inspire its interiors. The raw rugged woods on the walls, different types of full height mirrors, feature lights, handmade carpets, customised bespoke leather furniture enhances the design's texture & richness.

PC: The blue leaves design group



Living Area Furniture & Lighting at the Hillcrest Sample Floors



The Bedroom Back Wall at the Hillcrest Sample Floors



The Living Room of the Hillcrest Sample Floors



# Hyatt Place Rameshwaram

## highlighting traditional ethics with modern ethos

The innovative design and guest experience of Hyatt Place Rameshwaram sets a new benchmark for the select-service industry. It welcomed its first guests on March 2017, bringing bespoke luxury to the historic city of Rameshwaram...

Hyatt Place Rameshwaram is a new generation of hotels that offers casual hospitality in a smartly designed, high-tech and modern environment. However, designing and building an upscale select-service brand hotel like the Hyatt Place – differentiated by its modern product design, smart features, relaxed service model and fresh aesthetic – in a city like Rameshwaram presented its own challenges. Nestled on a beautiful island

on the lower side of India and separated from Sri Lanka by the small Pamban channel, Rameshwaram is considered one of the holiest places in India. This religious city has a unique historical backdrop, as this is where Lord Rama from the Hindu mythology created a bridge across the sea to Sri Lanka. Renowned for its pilgrimage centres and great religious value, it attracts visitors from all over India and abroad. Having witnessed many dynasties, its medieval Dravidian architecture is a visual treat for artists and designers. The tranquil beauty of its temple architecture apparently provides great peace of mind. It is also famous for its various local markets.

The client JKR Enterprise intended to achieve a rate premium based on its superior product and service offering in addition to Hyatt's strong brand recognition. Hundreds of hours of research with the architects, designers and consultants helped create an exciting hotel design with a competitive cost-per-key rate in the upscale select-service category. It features over 100 guestrooms, a teen club, function rooms, ballrooms, a business centre, day spa, extensive restaurants and a resort-style pool retreat. This resort experience includes direct interaction with the Rameshwaram climate due to its open-air food and beverage outlets and public areas. The lighting brief given to Lighting Research & Design was to be very mindful of operational expenses apart from capital expenses. Considering all the constraints, going the 100% LED way seemed like the best option.

### Photographs

Gowtham Raj & Amardeep M. Dugar

### Project team

Client – JKR Enterprise  
 Architecture – Centre for Design Excellence  
 Interior design – ASC Interiors  
 Landscape Architecture – ONE Landscape Design + Design Accord  
 Lighting design – Lighting Research & Design  
 Luminaire supply – Gojis Lifestyle + Unilites India  
 Fish pendants – Soto Decor

### Products applied

Bollards – K-LITE Disc 16W, Vera 16W  
 Controls – LEGRAND Universal dimmer + PHILIPS DYNALITE Multi-master  
 Decorative pendants & wall brackets – Custom  
 Downlights – ABBY Bling 5W + Snow 8W  
 Spotlights – ABBY Xyla 10W  
 Inground uplights – K-LITE ID 1W  
 Linear grazers – LEDS-C4 Convert 36W  
 Post-top luminaires – K-LITE Dixon 50W  
 Spike projectors – K-LITE Trioscape 7W  
 Underwater luminaires – ASTRAL Lumiplus S-Lim 24W + LEDS-C4 Aqua 18W  
 Up-downlights – ABBY Wallop 2x5W + K-LITE Wall-cylin 2x18W





The exterior and façade lighting treatment highlighting the unique architectural and design features of the property create a dramatic tonal contrast between the natural materials and the incredible Rameshwaram night sky. However, care has been taken to integrate these lighting treatments into the architectural features so as to reduce light pollution as well as the light sources' visual presence. 36W LED Linear grazers highlight the vertical façade elements formed by the recesses between the guestrooms windows and roof overhangs while preventing light trespass and light spill. Similarly, 2x18W LED up-downlights highlight the vertical elements between the upper ground floor lounge windows with the roof overhangs preventing sky glow. Even the landscape lighting treatment uses full cut-off angle bollards and post-top luminaires for pollution-free soft illumination. A 3000K warm colour temperature is maintained in all the guest access areas, while service areas are illuminated with a mixture of 4000K and 6500K cooler temperatures.

At every given opportunity the lighting is married to the architecture and interiors with numerous custom designed luminaires and incredible attention to detail, revealing textures, highlighting forms and reinforcing a sense of luxury and sophistication. LED strips provide an eclipse-glow to the stone facings on the entry ramp stonewall, guiding guests into the billowing reception canopy. The canopy's graceful gabled





form is gently illuminated with beam-integrated coves, offering a warm and inviting welcome experience. 14W/m LED strips tucked into the beams provide an ambient glow while custom-designed Fish-shaped pendants reminiscent of the local Rameshwaram culture contributes a textured luminous sparkle.

The entire interior is entrenched in culture and history in the form of paintings and photographs of Dravidian art and architecture. Guests are greeted with a giant photograph of the Ramanathaswamy temple highlighted with 10W LED adjustable spotlights upon entering the double-height airlock and security check area. Similar 10W spotlights integrated in the pelmet uplight the adjacent textured wall thereby framing the photograph. A similar toned corner photograph of the Rameshwaram beach backlit with LED strips greets the guests in the reception lobby area. A sense of similarity is maintained with miniature 5W LED downlights integrated within rectangular cut-outs in the dark-wood ceiling providing general illumination in the air-lock, reception lobby and lounge areas.

The lounge areas consist of casual seating with custom decorative floor lamps. The concept of artwork photograph is taken to the ceiling in the Internet kiosk section of the lounge area. The LED strips within ceiling coves provide the dual purpose of highlighting the photograph as well as provide







soft diffuse illumination sans veiling reflections for guests working on computer. Similar LED strips are integrated with the cabinets highlighting the artefacts placed within these cabinets. The reception counter itself is the centre-point of attention with LED strips integrated within the counter to graze the tiled surface as well as backlighting the fritted glass partitions above the counter.

The restaurant within the property caters for cosy as well as intimate dining. The lighting system follows traditional approaches such as selective use of downlighting, decorative pendants over the food displays and specific use of artwork

light. The miniature 5W downlights create the impression of having dinner under a starry-night sky. Pre-set controlled light settings subtly shift the guest experience, seamlessly transitioning spaces from day to night. The upper-ground floor recreation deck adjacent to the restaurant is an elevated oasis comprising swimming and reflection pools, private gardens and quiet spaces. While the lighting of various water-features, selected structures, planting and built elements present 'each-as-a-part-of-the-whole', the hierarchy of light planning ensured that the pools were the more dominant elements at night.

The innovative design and guest experience of Hyatt Place Rameshwaram sets a new benchmark for the select-service industry. It welcomed its first guests on March 2017, bringing bespoke luxury to the historic city of Rameshwaram. With extremely strict budget and energy constraints, the entire project was completed for a budget less than 0.5 US\$/ft<sup>2</sup> with an energy consumption of less than 0.5W/ft<sup>2</sup> for all luminaires and controls. ■



**Dr. Amardeep M. Dugar**  
Founder & Principal  
Lighting Research & Design





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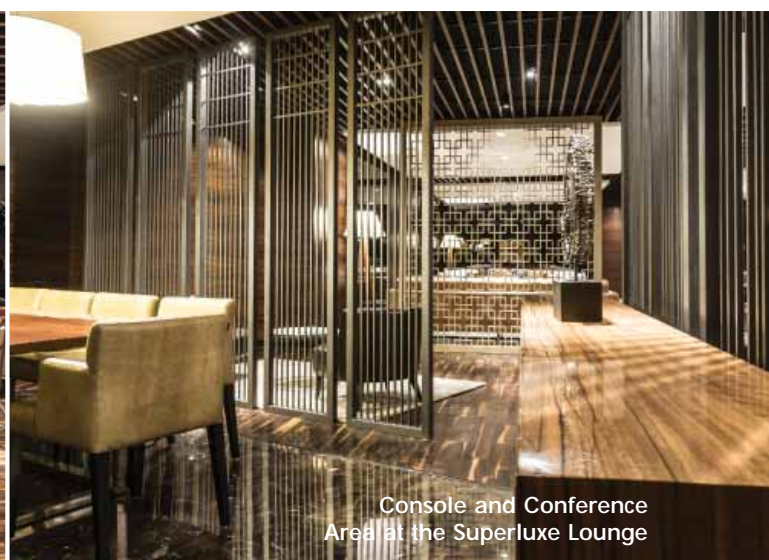


Conference Room at the Superluxe Lounge

**The Superluxe Lounge** is designed by **'The Blue Leaves Design Group'**. For their super VIP customers, real estate giant Supertech's Super-Luxe Lounge has various privileged service. The vast 5000 sq. ft. of open exhibition space has been decorated with the most exquisite materials and bespoke furnishings. The facility features lots of exotic woods, Italian stones, intricate custom-made metal work of copper and brass, hand woven carpets, imported leathers, lacquered glass and feature lighting. PC: The Blue Leaves Design Group



Meeting Zone at the Superluxe Lounge



Console and Conference Area at the Superluxe Lounge



Meeting Area at the Superluxe Lounge



# Smart Living Ideas from Häfele

Experience these space-efficient and smart-living innovations at the Häfele Stall this INDIWOOD from March 8th -12th, 2018 – IndiaWood Exhibition, Bangalore. Open your minds to new inspirations for designs that need form and functionality; and spaces that need 'More life per meter square'.



New Sliding Countertop

The concept of smart-living as a trend is gaining importance among city dwellers. The densification of housing and the on-going migration into urban centres is what brings living itself into motion. Separating walls are disappearing and living spaces are merging into each other. The integration of family and living space with kitchens (open kitchen concept) has increasingly become a very popular design option especially for small spaces.

Such a layout comes with multiple advantages. It transforms your kitchen into the pulsating hub of your home enabling easy conversations between your guests and you as you cook and prepare dishes. It also adds a sense of volume to your kitchen especially in modestly sized homes.

This INDIWOOD, Häfele introduces a box-full of home and kitchen innovations that are highly conducive to 'smart living' and will redefine your perspective on space utilisation:

## 1. Sliding Countertops

Optimising the space inside the kitchen creates new design possibilities, introduces balance and ensures efficient ergonomics. Häfele introduces its new range of Sliding Countertops that can double up as an addition to the current countertop or can cover built-in hobs, kitchen sinks, retractable

faucets, pop-up sockets etc. when not in use – the possibilities are endless!

## 2. Drawer Organisers

Organising the kitchen successfully does one and only one thing: makes life simpler. A muddle in the kitchen clutters not only the worktop but also your creativity. It is therefore desirable to have things out of the way. Häfele brings to you its new range of drawer organisers with three distinct finish series: Plastic, Wooden and Stainless Steel. The drawer organisers in each of these series include elegant and high-value inserts like cutlery trays, plate holders or organisers, container holders, knife holders and more.

## 3. Qanto Corner Solution

Reinventing your kitchen corner can generate easy space for storage. Häfele's Qanto - a plug-and-play corner solution - allows up to three versatile storage trays to be extracted and retracted vertically by a linear drive, at the press of a button. Utilising unreachable space in the corner to its optimum effect, Qanto is an intelligent corner solution which combines maximum operating comfort, generous work surfaces, well organised storage space, ergonomic qualities and the highest technical and design standards in a perfect symbiosis.





Tip-on Blumotion



New Qanto Corner Solution

#### 4. Cornerstone Maxx

Another innovative possibility to redefine corner space within a kitchen is Häfele's Cornerstone Maxx. When you open the corner cabinet in the kitchen, you need a solution that meets you with the full contents – without obstructing the adjacent cabinets. CORNERSTONE MAXX fulfils this need. Straight-extending kinematics with energy storage support; floating design with wide and stable shelf surfaces; and simple installation - your kitchen is upgraded in every respect as a result.



Häfele Connect

#### 5. Motion technologies for Cabinet fronts from Blum

Smooth fronts without handles are a typical feature of modern living environments. To make it easy to open such fronts, we bring to you the motion technology Tip-on Blumotion, which combines the Tip-on mechanical opening, with the reliable Blumotion technology that ensures added convenience through rounded motion and real usability!

#### 6. Efficient Waste Management

Taking into account that every aspect of the kitchen should give you optimal functionality, Häfele offers you the best options in managing your kitchen waste with effortless convenience. Take the Bo Touch Bin for example, that combines a beautiful design with all features for easy waste management at home. One, two or even three removable inner buckets for waste separation can be combined to give you the best possible solution!

#### 7. Walk-in Wardrobes

Effective bedroom designs ensure optimum space utilisation and provide a sense of clutter-free convenience. Häfele's Walk-in Wardrobe fittings - a range designed for the most precious corner of your bedroom – allow for efficient storage, easy access and astute convenience, making the daily interactions with your wardrobe a truly enriching experience!

#### 8. Häfele Connect

Smart technologies within homes add to the experience of easy and smart living. Häfele Connect - an innovative, intelligent and wireless system - offers you exactly this by connecting and operating the entire lighting of your entire home. With Häfele Connect you can now create the perfect atmosphere for many moods and settings with a centrally controlled system that is linked to your smart device - as easy to operate as the swipe of a finger! ■

Credit: Häfele India



## “Lighting designer must be an artist who should have awareness of all the art forms”

Sreekanth, a very renowned Thiruvananthapuram-based lighting designer in the country, started his career as a theatre actor and performance facilitator, where he found himself into theatre lighting design under the guidance of exponent lighting designers like V. Ramamurthy (India) and Remy Nicholas (France). He speaks to Lighting India about his journey so far and his new venture.



Band Performance



What drove you towards lighting firstly, what fascinated you towards Stage lighting?

After my formal education I too had the confusion and chaos as part of the general mindset of a youngster as to what to do and what to become. I joined a theatre group named 'Abhinaya', which moulded me into an artist. In Abhinaya, I have acted in plays directed by S. Ramanujam, Narippatta Raju, P Balachandran, D. Reghoothaman, Abhilash Pillai, etc. But over the course of time, realising my limitations, I moved into coordination and to the technical side of drama. Slowly, I started to learn stage lighting. I assisted D. Reghoothaman in lighting for a play by Kerala's first women's theatre named Abhinetri. The play was a big success. At that point, I realised that my future is in lighting and I should learn more about it. Still, I was very unfamiliar



**Cameo Light House**

in the technical jargon used in it. The main challenge was that no authentic books, journals or literature were available here to continue my learning process. A golden change came at that time. A businessman and art enthusiast, Achani Ravi from Kollam – Kerala, started a theatre named Sopanam and he constructed an auditorium also. V. Ramamoorthy was in charge of installation of lighting equipments in the theatre. Afterwards, he conducted a lighting workshop for finding new talents who can operate the equipments in the newly constructed theatre. I along with a few friends attended the workshop and that fascinated me. From that time onwards, I had attended all the workshops of V. Ramamoorthy and slowly became his assistant. Later on, I attended the NSD Technical workshop in Kerala under his guidance. What fascinated me more was attending the NSD festival in New Delhi. Now, I was able to connect everything which I had learned and which I had seen all these days and there my journey as a lighting designer started and is still going on. Coming back to Kerala with the rich experience, I had to face





### Classical choreographic Work

so many challenges like minimal and outdated equipments, no acknowledgement after the performance or show, no name of the lighting designer in the brochure, etc. 20 years back I used to get Rs.300 for a show working as a lighting designer which is way more than what an actor used to get. This, the need to survive, has also driven me to become a lighting designer.

How do you differentiate between theatres, dance performance and art festivals? What goes behind the visualising process? Because each one is different.

Question itself is the answer – 'because each one is different'. The theatre demands a different mood on the script. It varies from play to play. The ancient theatre follows a set pattern. The modern theatre demands more creativity and there is a space for experiment and the director gives more freedom to us. Here, a pre-production discussion is essential to create the mood.





Kerala Tourism Onam Celebration



Mother Jane Band

In the case of dance, in creative dance, scope for lighting has increased. In the case of classical dance forms, it is very difficult to convince the artist about the relevance of lighting in their performance. Situations are changing for better nowadays. The classical dancers are also accepting the importance of lighting in their productions and performances. The upcoming artists, on the other hand, are more aware and let us to explore the possibilities of lighting to improve the quality of their performances.

Festival lighting is a bit challenging. If the organisers have a plan to convey a specific theme, we have to work hard to establish the theme and bring the output. Through the effective and intelligent use of lighting we can establish the theme very well. For e.g. In the Delhi Commonwealth Games, the theme for the performance section was purely Indian. For

the 150th birth anniversary celebrations of Rabindranath Tagore, the theme was Rabindra Sangeet, where I had to concentrate on the minutest details so that nowhere the theme is missed out. The Serendipity Arts Festival in Goa is another theme based festival. In all these festivals the perfect use of thematic lighting will give a new energy and conveys the message that the organisers have conceived.

In some festivals where there is no such specific thematic element, we have our freedom to use our creativity and aesthetic sense to bring the best output through lighting.

Basically, it is the artists' imagination that I am conveying through my media. I should have a strong awareness in that. The output that the artist, show director or the choreographer visualises is implemented through me. If the output through my media needs to convey in an effective manner, the

#### Khattak dance performance





Receiving Kendra Sangeet Natak Akademi Award



Receiving Vayala Award from Former Chief Minister Shiela Dixit

wavelength of the thought process between the director and lighting designer should match.

In spite of having a proper plan, design and visualisation, do you find the need to improvise on the spot? How do you cope up with it?

In ideal situations, we execute what which was planned, plotted and agreed upon through discussions and rehearsals. In a live performance, if an artist breaks this, I also have to, but for good only. Certain situations demand improvisations. In some performances I had done improvisation, when I felt that there is a need for improvisation, without disturbing the wholeness of the performance.

When doing lighting for certain band performances, the artists will improvise or introduce some songs during the performance. Here, we have to adjust and quick and spontaneous reaction is needed. Here is where a lighting designer should have the perfect blend of knowledge of his tools, presence of mind and creativity.

Can you tell us about your 'Cameo Light Academy'? What is your vision?

In our country, technicians and designers of light learn from their career and experience rather than being formally trained at an institution of quality and expertise. The requirement of qualified professionals in the field is increasing day by day and yet we do not have an institution for training professionals in the field. I have been contributing in the field



Receiving Kerala Sangeet natak Akademi Award

of Creative Lighting Design for more than one and a half decade across the country and abroad for theatre productions, cultural shows, ambience and architectural lighting, etc. The exposure from this experience made me realise the urgent necessity for an institution dedicated to Creative Lighting Design, for the first time in India. My mission is to impart the practical and theoretical knowledge that I have acquired in these years and I consider this forward step a historic mission.

Even universities are there in Western countries dedicated for Lighting Design and an enthusiast from India will not be able to afford the expenses there. This is another reason why I started this Academy.

I am proud that in the first batch of 'Lighting Design for the Arts and Creative Industry', I have been able to train and contribute 15 young talents, including one female, to the lighting industry.

Any piece of advice for the budding Lighting Designers in India?

As I have seen, everybody wants to learn the techniques only. They do not want to learn the art and I have seen them lacking the perfect blend of the art and craft. Lighting designer must be an artist who should have awareness of all the art forms. I suggest that a lighting designer should learn music and painting. This will help develop a sense of rhythm and the basics of colour. These are the basics of lighting. Even though it is a technical thing, ultimately lighting design is also an art. If we approach lighting design as an art, we can create magic, even with minimal equipments. ■



Light Academy students



# Hong Kong International Lighting Fair (Spring Edition) Beckons You

A decade of trade at Hong Kong International Lighting Fair (Spring Edition) continues to offer business opportunities for a bright future.



Organised by the Hong Kong Trade Development Council (HKTDC), the Hong Kong International Lighting Fair (Spring Edition) celebrates its tenth anniversary this year during 6-9 April at the Hong Kong Convention and Exhibition Centre. The fair is expected to gather 1,340 exhibitors, showcasing latest lighting merchandises to global buyers. In the 2017 edition, the fair welcomed close to 21,000 buyers from 115 countries and regions.

## Bright Future for Household Lighting and Smart Lighting

HKTDC Research conducted a survey on the prospect of lighting market at the end of 2017. Finding indicated that household lighting (as chosen by 29 % of the respondents) is viewed as the category with highest growth potential in 2018. Meanwhile, the gradual banning of obsolete lighting items has led to a surge in demand for LED products. Of which, the survey reflected that more than half of the respondents (55 %) thought that indoor household lighting will continue to benefit from such replacement demand in the coming two years. As regards to future development, an overwhelming majority of respondents (93 %) believe that smart technology will facilitate the development of the lighting industry over the next two years.

## Thematic Zones for Easy Sourcing

The famed Hall of Aurora will continue to provide an elegant and extraordinary setting for top-notch brands around the globe to showcase their high-quality lighting fixtures and solutions. Leading brand taking part in the zone includes Tuya, MLS, TCL and SKY-LIGHTING. It is definitely the place for interior designers, lighting architects and retailers to look for high quality and trendy lighting products.

Meanwhile, a reorganisation of the fair layout this year

will bring about a few new zones, namely Residential Lighting, Technical Lighting and Urban & Architectural Lighting. Together with the Avenue of Chandeliers, Decorative Lighting, Advertising Display Lighting and Commercial Lighting, lighting products are further categorised by their applications in specific situations. Visiting buyers can find relevant lighting fixtures, components and accessories in each dedicated theme zone. Browsing and exploring desired luminaire products is easier than ever.

The spectrum of products encompasses not only the abovementioned zones. With thriving trend of smartification of light, the Smart Lighting & Solution zone will return to showcase advanced lighting systems, remote control and smart lighting solutions. While the brand new Horticultural Lighting zone will present the latest grow lights for different plants for both professional production and domestic use, as well as a selection of garden lights.

## Enlightening Events

In addition to the broad spectrum of products being shown by the exhibitors, a series of events will be held during the fair period to unveil industry trends and facilitate intellectual exchange among industry players. The Asian Lighting Forum, co-organised with the Hong Kong Electronics & Technologies Association and Hong Kong Institution of Engineers – Electronic Division, will cover topics such as convergent future of lighting industry and applications of smart lighting. Also, in a range of informative events, buyers and exhibitors will share market insights at forums on business opportunity, and experts will share on the testing, certification and inspection service for lighting products.

## ‘Exhibition Online’ and e-Badge – Escalating sourcing experience

To encourage suppliers to use online-to-offline (O2O) promotion, the HKTDC has enhanced the sourcing function of its trade fair websites by launching the new year-round ‘Exhibitions Online’ platform at the Spring Lighting Fair. Apart from featuring fair updates and the latest industry sourcing information, the new initiative also allows suppliers to connect with worldwide buyers anytime, while buyers can search and source desired products from the dedicated fair website. It extends the exhibition online, to facilitate business discussions between suppliers and buyers beyond the fair period.

The HKTDC’s e-Badge initiative, which was well-received when it was launched at last November’s Optical Fair, will gradually be introduced to most of the trade fairs this year, including the Spring Lighting Fair. ■

Further Information: [hklightingfairse.hktdc.com/ex/36](http://hklightingfairse.hktdc.com/ex/36)

# Light + Building 2018

The world's leading trade fair for lighting and building services technology will be held at Frankfurt am Main from 18 to 23 March 2018...



Fair Ground

Source: Messe Frankfurt GmbH / Jens Liebchen

**L**ight + Building 2018 presents tomorrow's trends in the home and, for six days, becomes a hotspot for design. Once again, all next season's trends for our homes will be on display exclusively at Light + Building, the top international event in the world of lighting and building services. Alongside the presentation of new design trends in the lighting market and the high levels of designer expertise demonstrated by the exhibitors, the Trend Forum will once again be an inspirational beacon and rallying point for the specialist retail trade, interior architects, designers and architects alike.

Forming the centrepiece of the Trend Forum, the trends in homes for the 2018 / 2019 season will be staged in four fascinating scenarios at Light + Building, to be held from 18 to 23 March 2018. The focus will be on various different styles, which integrate the latest designs for the home with selected products to create unusual and original scenarios for living spaces. New product developments, well-loved classics and innovative technology will all find themselves in the limelight, alongside one another.

## Digital, reductionist, refined – lighting for the modern world

The changeover to LEDs over the past few years marks one of the biggest ever shifts in the history of lighting design. Because of the gradual introduction of the ban on tungsten lamps, manufacturers and designers have been forced, in a comparatively short time, to adapt their lighting concepts, not

only in terms of the technology, but in terms of form, too. After a few years of 'transition', LEDs have become a well-established standard; and creative new approaches are now emerging from this new perspective on light and lighting that would have been unthinkable up until a few years ago.

## Light over luminaire

'Form follows function' – this historical design maxim is gaining new significance in the face of today's technical possibilities, combined with currents in modern society and design. Whilst, until a few years ago, lighting design was still concerned with devising the most decorative models possible to create sculptural accents in the home, luminaires can

now be seen to be receding into the background. Lamps have, in the main, become minimalistic in form and severely reductionist in design, with colour and materials adapted to the credo of restraint. Lighting itself, on the other hand, has achieved more powerful effects than ever – through colour, directional streams and reflections or the creation of artistic shadows.

## Always with an additional functionality: digital and flexible

The digital society of the future will make new demands on light and lighting: flexibility, individuality and digital control are equally relevant to lamp design. As a result, there are already a large number of lamp types that are integrated into the building-automation system or can be controlled via



Source: Messe Frankfurt Exhibition GmbH

Light + Building Top Theme 'The smartification of everyday life'





Source: Messe Frankfurt GmbH / Pirella Göttsche

Fair Ground

an app. Whether they are digitally networked or a stand-alone solution: their design, that key factor for success, is increasingly determined by additional functionality.

### Safety and Security

The demand for electronic security technology has been growing for years. This derives, on the one hand, from the positive economic climate in the building industry and, on the other, however, from the increased level of security awareness and people's willingness to spend money on security. When developing new concepts for life in homes and workplaces, consideration of security, convenience and comfort for inhabitants and users is an indispensable precondition.

### Smart networks

Increases in security, convenience and comfort do not, however, result from the mere installation of security technology. Only when the installed elements of the security technology are suitably integrated both with each other and with the overall building services network do they create a

'smart' building and, with it, the added value for operators and users. "Electronic security technology is becoming an integral part of the 'smart home' and 'smart buildings' in general. Sensors in the security system offer entirely new possibilities for data collection," suggests Bartmann, outlining the growth prospects for the market as a whole. Experts foresee a further boost from the 'Internet of Things'(IoT). Sensors are becoming more and more intelligent, smaller and cheaper, so that completely new applications will become possible in the future.

### Data security and data protection

Security installations protect people and possessions and must function reliably at all times. Accordingly, requirements for connection to the network are equally stringent, particularly in respect of data transfer via insecure IP-networks like the internet. Currently, it is the security concerns of consumers that are impeding the installation of 'smart' technologies. Indeed, an analysis relating to the IoT conducted by Accenture shows that half of the future consumers have reservations about the use of smart technologies, with regard to inadequate data protection and cyber intrusion.

Light + Building 2018, will be focussing on presenting the latest design trends in the lighting market. The spectrum of products at the world's leading trade fair in its field covers, amongst other things, designer lamps in a whole range of styles, technical luminaires and lamps of all sorts and kinds and for all applications, together with a large selection of technical lighting components and accessories, and including outside and street lighting. They are all to be found in halls one (Trendspot Design) to six and ten, as well as in the Forum. The exhibitors' design excellence and expertise will be on display in Frankfurt am Main from 18 to 23 March 2018.

The event will be picking up on the trends surrounding 'smart' buildings described above and is all set to become a catalyst for the development of modern workplace and lifestyle concepts. For the first time, home and building automation will be merged with electronic security technology to create a centre for integrated building services engineering, which will enable the trade visitors to get a concentrated overview in a short period of time.

All the signs for Light + Building 2018, therefore, unequivocally indicate further growth. Altogether, some 2,600 exhibitors are expected to attend. "As the world's leading trade fair for lighting and building services, Light+Building is the ideal platform for the development of 'smart' buildings with groundbreaking concepts for the workplace and home," says Maria Hasselman, Director of Brand Management, Light + Building, summarising the aims and objectives of the event. ■

For further information, please log on to: [www.light-building.com](http://www.light-building.com)



Source: Messe Frankfurt Exhibition GmbH

Light + Building Top Theme 'Aesthetics and well-being in harmony'



# Balgheim district upgrades to sustainable LED streetlighting

More than 200 outdoor LED luminaires from Osram Lighting Solutions bathe the municipality of Balgheim in new light. Thanks to the refurbishment of their lighting the southern Baden district in Germany achieves not only distinctly improved quality of light but also significantly cuts its energy costs. The long-life, low maintenance LED technology also reduces costs for maintenance and repair.

**B**algheim is a small but particularly progressive municipality with around 1,250 residents in the district of Tuttlingen, and with planning and decisions at community level has always aimed for cost-efficiency, sustainability and high practical use for its citizens. Balgheim has participated since 2015 in the sustainability project of the

region of Baden-Württemberg and has set itself targets of saving energy, maintaining energy efficiency and being a good example to the residents. All results and success factors are documented in a sustainability report.

Last year the mayor and council took the decision to refurbish the existing SON streetlighting and completely

upgrade to LED technology, and since then more than 200 Siteco LED outdoor luminaires ensure modern, sustainable lighting in Balgheim. The aim of the refurbishment was primarily to improve the lighting level and colour rendering, and thus improved visibility and an increased sense of safety and security for citizens on all roads, paths and squares. In addition to higher efficiency and economy, the new LED solutions should also radiate with an appealing and uniform design.

A total of 176 “DL30” town and park luminaires with warm white light colour (3000 Kelvin) and 36 “Streetlight 10” road luminaires with neutral white light (4000 Kelvin) were



Following the lighting refurbishment, the district community of Balgheim saves on operating and maintenance costs as well as reducing its greenhouse gas emissions by around 40 tons annually.



Around 200 Siteco outdoor LED luminaires provide greater efficiency and economy along with very high quality of light.

installed. All luminaires feature integrated technology for reducing lighting levels at times of low traffic. Simultaneously to refurbishing its road lighting, Balgheim has also upgraded the lighting of its church tower to LED – installing FL20 midi floodlights from Osram. ■

Source

Osram



# MVRDV completes Tianjin Binhai Public Library

MVRDV in collaboration with local architects TUPDI recently completed the Tianjin Binhai Library, a 33,700m<sup>2</sup> cultural centre featuring a luminous spherical auditorium around which floor-to-ceiling bookcases cascade. The undulating bookshelf is the building's main spatial device, a social space used both to frame the space, and to create stairs, seating, the layered ceiling and even louvres on the façade. Tianjin Binhai Library was designed and built in a record-breaking time of only three years due to a tight schedule imposed by the local municipality. Next to many media rooms it offers space that can accommodate up to 1, 2 million books.

The library was commissioned by Tianjin Binhai Municipality and is located in the cultural centre of Binhai district in Tianjin, a coastal metropolis outside Beijing, China. The library, located adjacent to a park, is one of a cluster of five cultural buildings designed by an international cadre of architects including Bernard Tschumi Architects, Bing Thom Architects, HH Design and MVRDV. All buildings are connected by a public corridor underneath a glass canopy designed by GMP. Within the GMP masterplan

MVRDV was given a strict volume within which all design was concentrated.

The building's mass extrudes upwards from the site and is 'punctured' by a spherical auditorium in the centre. Bookshelves are arrayed on either side of the sphere and act as everything from stairs to seating, even continuing along the ceiling to create an illuminated topography. These contours also continue along the two full glass facades that connect the library to the park outside and the public corridor







Picture Courtesy : © Ossip van Duivenbode

are meant to stimulate different uses of the space, such as reading, walking, meeting and discussing. Together they form the 'eye' of the building: to see and be seen."

The five level building also contains extensive educational facilities, arrayed along the edges of the interior and accessible through the main atrium space. Public program is supported by subterranean service spaces, book storage, and a large archive. From the ground floor visitors can easily access reading areas for children and the elderly, the auditorium, the main entrance, terraced access to the floors above and connection to the cultural complex. The first and second floors consist primarily of reading rooms, books and lounge areas whilst the upper floors also include meeting rooms, offices, computer and audio rooms and two roof top patios.

The library is MVRDV's most rapid fast track project to date. It took just three years from the first sketch to the opening. Due to the given completion date site excavation immediately followed the design phase. The tight construction schedule forced one essential part of the concept to be dropped: access to the upper bookshelves from rooms placed behind the atrium. This change was made locally and against MVRDV's advice and rendered access to the upper shelves currently impossible. The full vision for the library may be realised in the future, but until then perforated aluminium plates printed to represent books on the upper shelves. Cleaning is done via ropes and movable scaffolding.

Since its opening on 1 October the building has been a great hit in Chinese media and social media; reviews describe it as an 'Ocean of Books' (CCTV) and the 'Most beautiful library of China' (The Bund). Comments on social media call the building a 'sea of knowledge', 'Super Sci-Fi' or simply 'The Eye.' Most importantly, it is clear that the people of Tianjin have embraced the new space - and that it has become the urban living room it was intended to be.

Tianjin Binhai Library was built according to the Chinese Green Star energy efficiency label and has achieved two star status. MVRDV collaborated with Tianjin Urban Planning and Design Institute (TUPDI), structural engineers Sanjiang Steel Structure Design, TADI interior architects and Huayi Jianyuan lighting design. It is the second realised MVRDV project in Tianjin following TEDA Urban Fabric, completed in 2009. ■

Source: [www.mvrdv.nl](http://www.mvrdv.nl)

inside, serving as louvers to protect the interior against excessive sunlight whilst also creating a bright and evenly lit interior.

"The Tianjin Binhai Library interior is almost cave-like, a continuous bookshelf. Not being able to touch the building's volume we 'rolled' the ball shaped auditorium demanded by the brief into the building and the building simply made space for it, as a 'hug' between media and knowledge" says Winy Maas, co-founder of MVRDV. "We opened the building by creating a beautiful public space inside; a new urban living room is its centre. The bookshelves are great spaces to sit and at the same time allow for access to the upper floors. The angles and curves



Picture Courtesy : © Ossip van Duivenbode

Picture Courtesy : © Ossip van Duivenbode



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Website: [www.ledchipindus.com](http://www.ledchipindus.com)



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## Environmental Lights introduces 20-Amp capacity, single-channel dimmer

Environmental Lights, well known in LED lighting solutions, introduced the availability of a new high-capacity, low-cost single-channel dimmer.

Jordan Brooks, President, Environmental Lights, said, "The Single Channel StudioPro LED Dimmer is a simple, yet powerful, LED dimmer that is well suited for a wide variety of lighting applications. Due to its 20 Amp capacity, it's the ideal 'set and forget' dimmer for larger applications."

The Single Channel StudioPro LED Dimmer allows users to dim up to 20 Amps of single-colour LEDs seamlessly from 100% brightness to fully off for consistent control across large installations. The design utilises a 5kHz PWM frequency to ensure flicker-free lighting performance, making it ideal for on-camera applications. Additionally, its compact design allows for easy dimming on set without having to connect to a control board. The Single Channel StudioPro LED Dimmer features a knob with smooth dimming action to achieve the exact look that is needed on set, stage or anywhere where reliable lighting control matters. ■



Website: [www.environmentallights.com](http://www.environmentallights.com)

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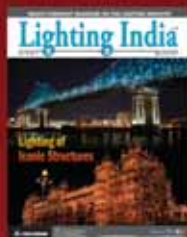
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## Index to Advertisers

Company Name	Page No.
Atco Controls (India) Pvt. Ltd. . . . . .	Inside Front Cover
Crompton Greaves Consumer Electricals Limited . . . . .	72
Dollar Electrical Industries . . . . .	13
GILE 2018 . . . . .	25
GPL Technical Solutions Pvt. Ltd. . . . . .	Inside Back Cover
Juki India Pvt. Ltd. . . . . .	3
Kripa Electronics (India) Pvt. Ltd. . . . . .	9
Ledchip Indus Pvt. Ltd. . . . . .	11
LED Expo 2018. . . . .	19
Light + Building 2018. . . . .	17
Malhar Plast Pvt. Ltd. . . . . .	15
OEM Systems Group . . . . .	Back Cover
Orient Electric . . . . .	7
Shenzhen Yanshuoda Technology Co. Ltd. . . . . .	5

## Event Calendar

### Light + Building 2018

**Venue:** Frankfurt Fair and Exhibition Centre, Germany

**Date:** 18-23 March, 2018

**Website:** [www.light-building.messefrankfurt.com](http://www.light-building.messefrankfurt.com)

### LED Expo Mumbai 2018

**Venue:** Bombay Convention & Exhibition Centre, Mumbai

**Date:** 10 - 12 May, 2018

**Website:** [www.ledexpo-mumbai.com](http://www.ledexpo-mumbai.com)

### PALM Expo India 2018

**Venue:** Bombay Exhibition Centre, Mumbai, India

**Date:** 31 May - 2 June, 2018

**Website:** [www.palmexpo.in](http://www.palmexpo.in)

### Light India 2018

**Venue:** Pragati Maidan, New Delhi

**Date:** 11-13 October, 2018

**Website:** [www.light-india.in](http://www.light-india.in)



The background of the advertisement is a photograph of a modern office interior. The ceiling is white with a grid of square tiles, many of which are illuminated from within, creating a bright, even light. In the foreground, a large, square, white LED luminaire is shown in a perspective view, highlighting its slim profile. Below it, two circular LED luminaires are also shown, one in a perspective view and one in a top-down view. The office space below features white desks, black office chairs, and large windows in the background.

# Crompton

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**Commercial Lighting  
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### **Crompton Greaves Consumer Electricals Limited**

Lighting Division, Tower 3, 1st Floor, East Wing, Equinox Business Park,  
LBS Marg, Kurla (W), Mumbai 400 070. [www.crompton.co.in](http://www.crompton.co.in)

#### **North:**

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011 23460796

#### **East:**

033 40514935

#### **West:**

022 61132751  
022 61929402

#### **South:**

044 42247500  
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THE GOLDEN PEACOCK GROUP

# COMPLETE SUSPENSION SOLUTION for MEP SERVICES AND LIGHTING

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Golden Peacock is a leading manufacturer & exporter of Precise Brass Parts, Lamp Holders, Suspension Kits, Cable Grippers, Display & Signage Systems, Lighting & Electrical accessories. We have a well equipped Research lab with 20 plus patents to our credit along with highly experienced quality team which assure products of International standards. We are serving over 200 customers spread across 40 countries around the world.

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(HVAC, PIPES, CATENARIES)

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(CABLE TRAYS, RACEWAYS)

- **SUSPENDED CEILINGS**  
(False Ceiling, Acoustic Baffles etc)

- **LIGHTING ACCESSORIES**  
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# OEM Systems Group

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### SUPERIOR DIMMING

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### COST - EFFECTIVENESS

DALI (Digital Addressable Lighting Interface) has been more commonly found in commercial environments and is a digital system. It is very flexible in its deployment and use. Our DALI is generally used with professionally designed lighting control systems. We are increasingly using DALI for luxuries high end lighting projects.

### BAG ICD (Intelligent) Series 250mA - 900 mA - 60W - 100W 2 Products



(LxWxH): 360 x 30 x 21 [mm]



(LxWxH): 360 x 30 x 21 [mm]

### BAG CCD (Isolated) Series 350 mA - 1400 mA - 18W - 140W 12 Products



(LxWxH): 360 x 39 x 21 [mm]



(LxWxH): 360 x 30 x 21 [mm]



(LxWxH): 280 x 39 x 21 [mm]



(LxWxH): 135 x 75 x 21 [mm]

### BAG NCD (Non-Isolated) Series 400mA - 800 mA - 70W - 100W 4 Products



(LxWxH): 280 x 30 x 21 [mm]



(LxWxH): 280 x 30 x 21 [mm]

For more information

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### Customer Care

**9595000200**

www.OEM-Systems.com

Applications :



BAG electronics (India) Pvt. Ltd.

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