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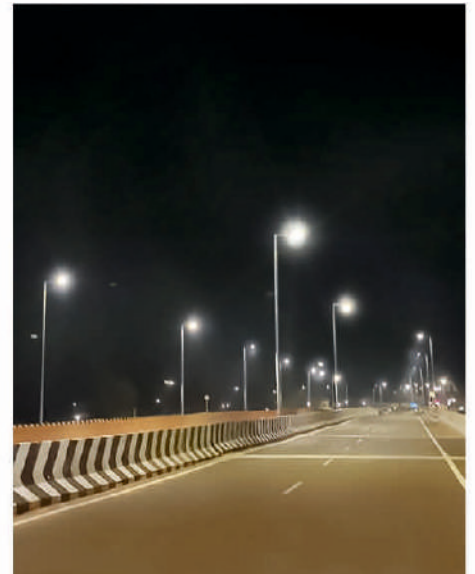
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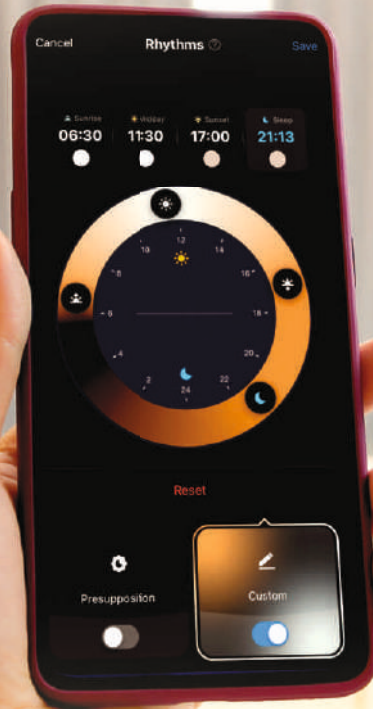
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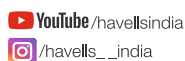
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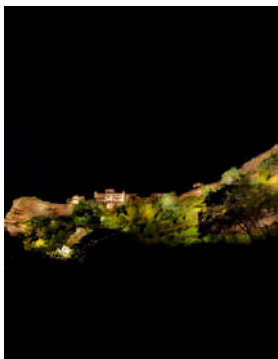
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A Festive Season of Innovation and Economic Optimism

As we near the end of another year, ELCOMA members are preparing to delight Indian consumers with a dazzling array of new products during this festive season. Smart home solutions, decorative lighting fixtures, and innovative connected lighting options are poised to brighten homes and stimulate consumer spending.

The upcoming quarter also marks the 100-day milestone of the Modi government's third term. Many experts believe that India's ambitious goal of a \$5 trillion economy by 2027 is achievable if the country maintains an average annual growth rate of 8%. To realize this vision, increased private consumption, particularly in rural areas, is essential. The country witnessed an above-normal monsoon this year, which is expected to boost agricultural produce, increase rural purchasing power and spending, and contribute to overall growth in rural economic indicators. Following the general elections, the government injected significant stimulus into the economy with a \$576 billion budget, allocating substantial funds for affordable housing and rural job creation.

While the recent Union Budget didn't directly impact the lighting industry, it did extend customs duty concessions on imported components and machinery. Additionally, the budget promises to bolster agricultural spending, improve credit access for MSMEs, and incentivize job creation.

The government has also approved the establishment of 12 Industrial Smart Cities, in addition to existing ones in Greater Noida and Dholera, Gujarat. These cities will promote manufacturing by fostering a blend of residential and commercial zones.

Furthermore, the government has launched the PLI 3.0 Scheme for White Goods, including ACs and LED Lights. ELCOMA members have welcomed this initiative, which aims to boost domestic component manufacturing. ELCOMA is actively working with MEITY and DPIIT to connect with component manufacturers.

On the international front, India was represented by two ELCOMA members, BAJAJ Electricals and ORIENT Electric, at the BRICS Smart Lighting Industry Summit and the 11th meeting of the BRICS SSL Collaboration Working Group in Shenzhen, China.

As we conclude this year, we are heartened by the valuable contributions of industry professionals through their articles and insights. We encourage more of our colleagues and members to share their experiences, new technologies, and product launches to further enhance this magazine.

Wishing all our readers a joyous Diwali and a prosperous New Year!

A handwritten signature in black ink, appearing to read 'Amal Sengupta'.

AMAL SENGUPTA
Secretary General
ELCOMA

LEDVANCE AND AMS OSRAM LICENSING PARTNERSHIP EXTENDED BEYOND 2026 AND EXPANDED TO INCLUDE MORE PRODUCT CATEGORIES IN LIGHTING BUSINESS.



LEDVANCE



LEDVANCE and AMS OSRAM have agreed to continue their trademark licensing partnership for general lighting lamps beyond 2026 and well into the next decade. This was formally announced in Germany on 5th September, 2024 with confirmation that their cooperation will be expanded to include general lighting luminaires outside of mainland China, Hong Kong and Macao, forging a unique partnership.

Since 2016, LEDVANCE has been the exclusive licensing partner for the OSRAM and SYLVANIA brands in the field of general lighting lamps. The success of this partnership has led to the early extension and expansion of the licensing agreement for the OSRAM brand while the license for the SYLVANIA trademark in the US and Canada remains in force. With the continued exclusive license to use the OSRAM brand for lamps and the extension to modern luminaires, LEDVANCE will be the distinguished partner with the largest scope and variety of general lighting products sold under the OSRAM brand worldwide.

"The expanded license under the famous OSRAM brand enables us to further grow our business around the globe," says Jue Wang - Executive Senior Vice President, LEDVANCE GmbH, Germany



LEDVANCE is licensee of product trademark OSRAM for lamps products in general lighting.

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Continued Success and Growth

Dear Esteemed Members of ELCOMA,

As we step into the final quarter of this year, it is heartening to see the Indian economy continuing its robust growth path, underpinned by strong consumer confidence and a renewed sense of optimism. India's economic momentum remains one of the most promising globally, with infrastructure development, increased urbanization, and a favourable business climate creating vast opportunities. For our lighting industry, this presents an unparalleled moment to innovate, expand, and deliver more value to our consumers.

With the festival season, especially Diwali, right around the corner, the positive sentiments and festive mood in the market are evident. Consumer spending is on the rise, and this period is always marked by an uptick in demand for lighting products. This year, the surge in residential, commercial, and smart lighting solutions will continue, offering all of us in the industry an opportunity to amplify our businesses. I encourage each one of you to seize this moment, leverage the festive mood, and explore ways to reach more consumers with innovative and energy-efficient solutions.

One of the areas that holds tremendous potential is the integration of Artificial Intelligence (AI) in lighting. In my previous messages, I touched upon how AI is revolutionizing the way we design, manufacture, and manage lighting systems. From smart homes to intelligent city lighting, AI is no longer a concept of the future—it is here, and it's reshaping our industry. Those who embrace this technology will find themselves at the forefront of a new era in lighting, where automation, customization, and sustainability converge. I urge all our members to keep innovating and adopting AI-driven solutions to stay competitive and meet the evolving demands of our consumers.

I also take this opportunity to extend a heartfelt thanks to the ELCOMA Secretariat for their unwavering support and dedication. Their hard work behind the scenes has been instrumental in organizing our activities and strengthening our community. A special congratulations to the Secretariat, and all of you, for helping us achieve a significant milestone—the establishment of our new permanent ELCOMA office. This is a proud moment for all of us. Our new office will serve as a centre of excellence and collaboration, enabling our community to thrive in the coming years. This space will not only enhance our ability to serve members but also position ELCOMA as a beacon of progress and innovation in the lighting industry.

As this is my final message to you as President of ELCOMA, I want to express my deepest gratitude to all of you for your trust and support over these years. It has been an honour to serve this incredible community and to witness the remarkable growth and transformation of our industry. I am confident that under the leadership of the new board, ELCOMA will continue to reach new heights and lead our industry toward a brighter future.

Thank you once again for the opportunity to serve as your President, and I wish each of you continued success and growth.

With warm regards,



AVINDER SINGH
President, ELCOMA





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Driving A Brighter Future

Illumination got the opportunity to catch up with Mr. Puneet Dhawan, Managing Director, LEDVANCE Private Limited (wholly owned subsidiary of LEDVANCE GmbH, Germany) on his long industry career and his recent move to Ledvance

Before LEDVANCE, you had long stints with Bajaj Electricals, Crompton Greaves and Orient Electric. Would you like to share some of some of your experiences and learnings in each of these organizations, that you believe will help in your current role?

I feel very fortunate to have worked with reputed players of Indian Lighting Industry and each of them has provided with varied and rich experience which was instrumental in my professional growth. My first stint was with Bajaj Electricals and it taught me the basics of lighting and its application as frontline sales person for B2C and B2B channels. I still recall my learnings with respect to distribution management in varied markets of Punjab and Eastern UP during the early nineties.

My next stint with Crompton Greaves really shaped my professional career as I joined as Marketing Executive for consumer products group and rose to become India and Global Sales head for Consumer Products division. The journey of 19 years was full of learnings starting with strong Institutional/Industrial Business practices. It also provided playground and motivation to use my learnings of earlier job to scale up B2C business for lighting. Most admirable experience from this stint is the investment done by organisation in terms of spending enormous resources in all-round development and grooming for higher responsibilities. High performance orientation and constant evolvement of systems and processes to ensure consistent growth were the treasures which helped me a lot in my third stint with Orient Electric where I had joined with an objective to build the business.

Both the earlier experiences provided enough confidence and skillset to take up this challenge in the middle period of my career. Working in Orient Electric as P&L head for Lighting and Switchgear businesses was the best professional assignment of my life till date. Experience and learnings as a result of working closely with promoters and independence to plan and execute my strategies to build the business cannot be explained in few words. This stint

helped to cement ownership for the business which required working with all arms of business such as manufacturing, sales, marketing, R&D, finance, HR etc and the experience of turning around the business and then making it one of the frontrunners in next 4-5 years brought immense professional satisfaction and prepared me to take up the current challenge of charting the growth path for LEDVANCE

You have had more than three decades of experience in the Indian Industry. Please share our thoughts on how the Indian Industry has changed in these three decades in terms of market, consumer behaviour and brand building.

I think that the Indian industry, particularly Lighting Industry has seen various changes like technology changes from incandescent lamps to CFLs to LED along with development of Industrial and Commercial Luminaires market which has resulted in changing business models from few big wholesalers to FMCG type distributors to Modern Retail and E-commerce channels. The consumer behaviour has also changed a lot with consumers becoming more aware about the technological changes and wide availability of choices as compared to very few big players three decades ago. Lighting has become very important consideration in the new and modern dwelling units and consumers have started spending higher amounts towards lighting of their homes and offices/shops. I also think that we have seen the emergence of one big country becoming the global producer/supplier of lighting products and then seen the start of the decline as other countries like us developing local industry.

You have started your career in lighting and have experience in other consumer products, as well. How do you find the experience in lighting compared with other consumer products in terms of sales and marketing?

I think sales and marketing for Lighting products is indeed unique as this product is the most basic consumer product which is being used on daily basis by

consumers and since the unit value of the same is much smaller as compared to some similar experiential products like Televisions, Fans, Refrigerators etc so the consumer involvement with Lighting products has been much lesser.

Therefore, it is always a challenge for Lighting sales and marketing teams to devise strategies around the influencers who will make the consumers buy particular product. Also, efforts required by Lighting teams have to be much more consistent and retailer focused as availability of products at the right place and right time are the key success factors unlike other consumer products where the customer does makes an effort to locate his chosen/preferred brand.

You have mentioned in earlier interaction that joining the Lighting Industry in 1991 was the most important decision of your life. Can you please enlighten our members why do you feel so?

Yes, I mentioned so as I felt that I had joined an industry stream where we were instrumental in bringing light to consumer's life. Also, the excitement of watching any project getting lit up with products of your company with your design and recommendations is similar to seeing your child growing up in life. Three decades ago there were very few lighting professionals and thus I feel privileged to have got opportunity at that time to join this Industry and today I feel proud about the same with my professional journey

Being a Chinese owned company, do you feel that Ledvance has a disadvantage in the current Indian market compared to Indian brands?

LEDVANCE is wholly owned subsidiary of LEDVANCE GmbH, Germany and yes the ultimate owner is MLS, China. But I don't think there is any disadvantage for us due to this ownership as we have almost 100% localised product portfolio and in this respect, we are as Indian or as Chinese as any other Indian Lighting company. In today's global economic scenario, such kind of ownerships are common and they do bring more synergies for business growth in the long run.

In fact, I can proudly state that the Light

CAPTAIN SPEAKS

source (LED chip) in most of the lighting products made in India are supplied by our ultimate owners.

We are given to understand that the OSRAM license arrangement with LEDVANCE would expire in 2026. How does this impact your go-to-market strategy? Are you already planning to phase out the OSRAM branding and introduce lamps in LEDVANCE brand?

It gives me pleasure to share that earlier in this month, we have signed an MOU with AMS OSRAM for extension and expansion of our license arrangement. Extension is in terms of continuation of earlier license for another decade and expansion is in terms of inclusion of Luminaires and Smart Lighting.

So, you will be seeing the combined strength of LEDVANCE and OSRAM across all lighting products in coming months which I am sure will help us in accelerated business growth and market share improvement.

What are your views with respect to the current pricing strategies and growth plan considering that bulbs and battens pricing is down by over 20% in last 2 quarters?

Our plan is to focus on volume growth for bread-and-butter products and to focus on selling 'Product Mix' in terms of consumer and commercial Luminaires to ensure value growth. I hope the price erosion in basic products like lamps and battens will not be of the same extent which we have seen in last 3-4 quarters.

Having a long experience in B2B, how do you see business growth in the professional lighting in the coming years?

I think B2B business will continue to grow much faster as compared to B2C as there is rapid growth in CAPEX in Government and Private sector in coming years. Infrastructure push by government will ensure enough potential for B2B products.

On the back of a weak performance in the Lighting Industry over the last financial year, how do you see the industry performing in the next couple of years as a whole and what would be the primary drivers for that?

I think consumer preference for enhanced lighting experience at his home and workplaces and immense B2B potential will be the key growth drivers for Lighting Industry in India. Improvement in housing infrastructure (both private and Government driven) and availability and penetration of electricity will aid these enablers.

You have witnessed the transition of lighting technology from GLS, Halogen and FTLs to CFL and electronic controls and then to LED. What further transitions do you foresee in the lighting industry in the next 5 years especially considering the advent of AI / ML in the field of lighting solutions?

I think there will be definite expansion of Smart Lighting segment with products/technology becoming more robust and affordable for Indian consumers. Commercial/Industrial lighting business may see faster conversion to smart solutions as the benefits will be outweighing the initial investment in much smaller time period.

Can you please share some of your thoughts on your vision on fostering innovation and nurturing the right talent?

I think the current number of Institutions teaching Lighting as a wholesome subject and specialized field are very less and we will need more avenues for such teaching and trainings. Also, spending by companies on developing

R&D and Innovation teams will need to increase many folds if we wish to become big in this field.

What are the three things you would like to advise ELCOMA to do by which the association can better serve the industry and consumers?

I think ELCOMA has done immense service to Lighting Industry and in coming years I wish that it gets to interact more with Industry and consumers and helps to strengthen shape up performance and safety standards and enables its implementation across industries so that consumers can have safe and quality product experience.

It is estimated that a large number of products being sold in India are non-compliant (non-BIS certified) products. How does this impact Ledvance and what kind of advocacy would you recommend going forward?

LEDVANCE strongly believes in providing quality products with strict compliance to all applicable standards and thus is a strong advocate of controlling the availability of non-compliant products in the Indian market. ELCOMA has already taken up this initiative and has been working and enabling the various government agencies to help to curb such products. LEDVANCE fully supports this initiative with active participation and all possible help in line with other Industry players.

IN A LIGHTER VEIN

How do you pass your free time on weekends?

I spend my time playing cricket and with my family including my Golden Retriever - Pluto

What are your hobbies?

I am an avid sports follower so I do play a lot and watch the same. Also, I do like to be updated and hence spend lot of time on current affairs

What is your favourite movie?

My favourite movies are "Chupke Chupke" and "Zindagi na milegee Dobar"

What is your favourite food?

I love to have Amritsari Kulcha with chana

What is your favourite Holiday Destination?

Switzerland outside India and Binsar in India

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Delivering Innovative and Sustainable Lighting Solutions

ELCOMA caught up with Mr. C Arun Kumar, Head of Consumer Business - Signify, Greater India for his thoughts on the future of lighting business in India

Please tell us briefly about your long professional career journey with Philips / Signify.

I started my professional journey with Philips, now Signify, and have seen the company grow and evolve over the years. The lighting industry has undergone a significant transformation driven by technological advancements and sustainability trends. At Signify, we have always been at the forefront of this change, delivering innovative and sustainable lighting solutions that cater to the evolving needs of our consumers. Our focus on customer-centricity, innovation, and sustainability has helped us expand our market presence and solidify our position as a leader in the lighting industry.

'Dream more, learn more, do more, become more, succeed more, the persistent pursuit of knowledge enables one to create a legacy that inspires others to be more', being my motto for life, I am a firm believer in teamwork, dedication and passionately moving ahead. Over the nearly three-decade-long enriching journey, I have held leadership positions in B2C and B2B domains aimed to create a value proposition at every stage of my career, charting out high-impact business with effective and efficient strategies.

Currently as the Head of Consumer Business at Signify, driving the brand narrative and business, I focus on conceptualizing growth strategies for enhanced customer experience, strengthening the product portfolio, and engaging collaboratively across the board with a talented team to deliver 360-degree solutions for our customers across India. By introducing innovative lighting solutions, we ensure to continue

with our position as a market leader in the lighting industry in line with our #BrighterLivesBetterWorld goal.

As the head of Consumer Business, what are main opportunities you see in the market?

Currently there are several growth opportunities in the market and all the future growth trends point towards increased digitization, customization and personalization. With the rise of IoT and connected devices, we foresee a significant demand for smart lighting solutions. These solutions offer benefits like energy efficiency, convenience and enhanced functionality to end consumers.

Brand positioning is an important business strategy. What has been your journey with Ecolink vis-à-vis the already established more than a century old Philips brand?

In our journey with Ecolink, we have focused on creating a range of products that combines technology with superior performance and energy efficiency. Our goal with Ecolink has been to meet the evolving needs of consumers who are increasingly seeking value for money energy efficient solutions. On the other hand, Philips is a brand that has been trusted by consumers for over a century. It carries a legacy of quality, reliability, and innovation. Both brands, while catering to different segments, share Signify's commitment to innovation, sustainability and customer-centricity. Whether it's through the energy efficient solutions from Ecolink or the tried-and-tested reliability of Philips, our aim remains to deliver lighting solutions that enhance the lives of our consumers and contribute to a better world.

Please share some of your thoughts on how innovation can be the cornerstone for future technologies in lighting.

Innovation is indeed the cornerstone for future technologies in lighting. At Signify, we are constantly exploring new ways to enhance the user experience and push the boundaries of what's possible with lighting. Technologies like voice assistants, Artificial Intelligence (AI) and Internet of Things (IoT) are revolutionizing the lighting industry. They allow users to control lighting using voice commands or through mobile apps and even automate lighting based on the user's preferences. Our Philips WiZ range also supports voice-controlled operation with all major voice assistants and AI providing intelligent scheduling.

Given your experience in B2B, how do you see the growth in the professional space in the next 5 years?

In the next five years, I anticipate substantial growth in the professional lighting space. As businesses become more aware of the importance of sustainability and energy efficiency, the demand for innovative lighting solutions that can meet these needs is expected to rise. Smart lighting solutions, which offer enhanced control, convenience and cost savings, are likely to be at the forefront of this growth. These solutions can be programmed to operate on schedules, respond to changes in ambient conditions and even be controlled remotely, making them ideal for professional settings.

Additionally, we recently launched our revolutionary lighting system The NatureConnect; developed through

CHAT TIME

extensive research recreates the positive effects of natural light indoors, for professional spaces, hospitality and the healthcare industry in India.

The Government has asserted that India is poised to become the world's third-largest economy. How do you feel lighting, as an industry, will contribute to this economic growth?

Lighting, as an industry, will play a crucial role in India's economic growth. Energy-efficient lighting solutions not only reduce electricity consumption but also contribute to a sustainable environment. Moreover, the lighting industry is a significant employer and contributes to job creation. With the government's focus on 'Make in India', the lighting industry has the potential to attract investment and boost manufacturing. Additionally, 98% of our products are designed in India.

As the world becomes more connected, we expect to see a greater demand for smart lighting solutions that can be controlled remotely and customized to individual preferences. With the rise of IoT and connected devices, we foresee a significant demand for smart lighting solutions. These solutions offer benefits like energy efficiency, convenience and enhanced functionality. They can be controlled remotely, programmed to operate on schedules and even respond to changes in ambient conditions. We envision a future where light is not just about illumination but also about delivering new experiences and value to our customers. Our growth strategy revolves around innovation and R&D, sustainability, smart lighting, customer-centric approach and market expansion. About 5% of our global sales is invested in R&D and focused on low-carbon

technological innovation.

The Government is talking about Ease of Doing Business vis-à-vis the current regulatory compliance requirements and seeking views of the associations.

What message would you like to convey to ELCOMA?

Ease of Doing Business is a critical factor that can significantly impact the growth of any industry, including lighting. For the lighting industry to thrive, it's essential that regulatory compliance requirements are simplified and streamlined. We would urge ELCOMA to collaborate closely with the government to advocate for regulations that support the growth of the industry while ensuring the safety and well-being of consumers.

In ELCOMA's Vision Document, we have mentioned to make India as export hub for Lighting products and

capture at least 10% of Global Lighting market by 2030. What are your views on the same considering that Signify has a presence in almost the entire world?

Our vision in making India an export hub for Lighting products is indeed a commendable one. With Signify's global presence, we are well-positioned to contribute towards achieving this goal. We believe that with supportive policies and the right kind of assistance from the government, India has the potential to capture a significant share of the global lighting market by 2030. This would boost the country's economy and position India as a global leader in innovative and sustainable lighting solutions. We are also the pioneer in smart and connected lighting solutions in the Indian market being the largest deco lighting branded store network with 286 Philips Smart Light hubs.

IN A LIGHTER VEIN

How do you pass your free time?

In my free time, I enjoy catching up on current affairs, cooking and spending quality time with my family and friends. Nothing beats a good binge-watch for me.

What are your hobbies?

My hobbies include cooking and maintaining a regular fitness routine. I believe that it's important to keep the body and mind healthy.

What is your favourite movie?

As for my favourite movie, I am a big fan of Rajnikant movies. His charismatic screen presence and unique style are always enjoyable to watch.

What is your favourite food?

When it comes to food, nothing beats curd rice for me. It's a simple yet comforting dish that I can never get enough of.

What is your favourite Holiday Destination?

For holidays, I love visiting Chikmanglur in Karnataka as it's closer to home and offers a serene getaway. Additionally, I recently visited Eindhoven, it is a fabulous place known for the vibrant culture, beautiful landscapes and museums which also happens to be our headquarters.

INTERVIEWED BY ILLUMINATION
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Lighting Innovations Illuminating the Future

Radhika Opto Electronics Limited has roots dating back almost 4 decades and has come a long way since its humble beginnings. The company started off making conventional lighting fixtures for Crompton Greaves and steadily grew its operations till 2012 where it reached an inflection point with the advent of commercialized LED lights after which the company grew at a rapid pace. We had the foresight to see how disruptive this new technology would be and we decided on capitalizing on this opportunity. Driven by our visionary approach, relentless hard work, exceptional teamwork and uncompromising ethical standards, we constantly added new and innovative products to our portfolio and expanded our customer base to reach all major LED brands of India.



Radhika Opto Electronics Limited

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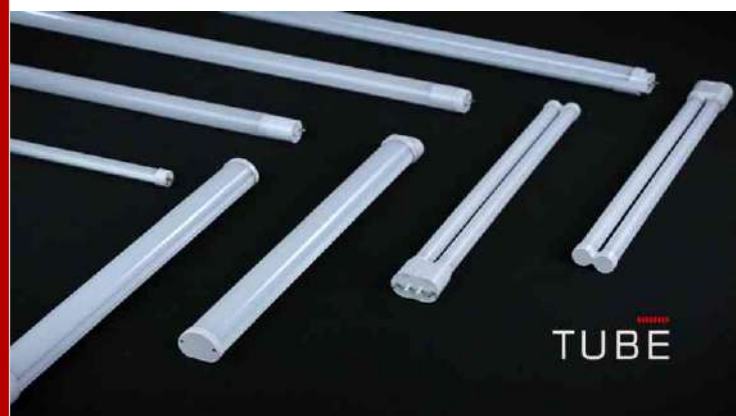
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Jaquar Enhances the Brilliance of Heritage Buildings in Gwalior Smart City

Jaquar's Made in India luminaires create a mesmerizing experience for the city of Gwalior.



T rue to the vision of “Virasaton ka Sanrakshan, Vikas ka Darpan” (Conservation of Heritage, Reflection of Development), Gwalior Smart City has been progressing rapidly in restoring the heritage buildings of the city.

Gwalior Fort, perched atop a rocky hill, offers an enchanting experience that transcends mere historical significance. As the sun sets and darkness envelops the landscape, this majestic fort transforms into a realm of mystery and allure. The stories whispered by its ancient walls resonate more profoundly under the moonlight, inviting visitors to connect with the past on a deeper emotional level.

The fort's grandeur is amplified at night; the illuminated structures create a breathtaking contrast against the starry sky, making it impossible not to feel a

sense of wonder and reverence. Visiting Gwalior Fort during these dark hours offers not just an escape from the hustle of daytime but also a reason to return time and again. Each visit promises new insights into its storied history while providing an intimate connection that daylight simply cannot replicate. This is where legends come alive, where every corner holds secrets waiting to be discovered—an experience that beckons adventurers and history enthusiasts alike to embrace the magic of Gwalior after dusk. The fort when lit up by lights at night, tells a story and provide an emotional connection that doesn't exist during daytime.

The fort is lit up using a combination of Jaquar's Customized Nuklous floodlights with different range of luminous flux, a variety of CCTs (specifically 2700K, 3000K and 2200K) and even in different

beam angles, all of which are strategically placed to bring out the grandeur of its walls, gates, and palaces. The golden-hued lights that line the fort's walls emphasize its rugged exterior, giving the fort an ethereal glow that contrasts sharply against the dark sky.

Jaquar illuminated the longest part of the fort (approximately 2.3 Km) which is visible from almost all the important locations in the city. The Nuklous floodlights used to illuminate Gwalior Fort are designed to respect the fort's historical heritage while using modern Made-in-India technology of Energy-efficient LED lights and are also minimize the impact on the environment while ensuring that the fort remains illuminated throughout the evening.

Moti Mahal, the second site for the project stands as a testament to the





opulence and grandeur of the Scindia dynasty. Its stunning architecture, adorned with beautiful murals, intricate carvings, becomes even more captivating after dark, thanks to the thoughtful and strategic illumination of the structure.

The illumination of Moti Mahal is designed to highlight its architectural elegance. Nuklous Floodlights and Lorette Linear wall washers with varied beam angles, wattages and length ranging from 300mm to 1000mm were carefully selected and positioned to illuminate the delicate carvings and ornate details of the palace. The soft, varied glow of the lights enhances the building's regal ambiance, making the palace shimmer like a jewel in the night.

This lighting brings out the details of the jharokhas, pillars, and arches, casting dramatic shadows that add depth to its majestic appearance.

Moti Mahal's lighting is more subtle and sophisticated, reflecting the palace's historical and cultural significance. The exterior of the building is bathed in warm tones, while certain sections, such as the domes and towers, are accentuated with brighter lights. This subtle approach allows visitors to appreciate the structure's form and texture without overpowering its natural beauty.

At present, specially trained technicians are installing luminaries on the Gujri Mahal Gate, the third building. To illuminate the gate effectively the design

was done in such a way that soft, warm-colored LED lights highlight the intricate carvings and structure of the gate without overpowering its historical essence.

Nuklous floodlight on the floor pointing upwards accentuate the arch and main gate features. This creates an upward glow that brings attention to the height and grandeur of the gate.

By illuminating these elements, Jaquar has created a captivating visual experience that enhances curb appeal and invites admiration from guests and passersby alike. The soft yet powerful light enhances textures and shapes, making every curve and angle stand out beautifully against the night sky, Nuklous floodlights are not just about functionality; they are about elevating your building's aesthetic presence, ensuring that it leaves a lasting impression.

The Jaquar lighting team is also in the process of installing Cloud based control system that makes the system independent and administrators are able access the system from anywhere in the world.

This control system not only adapts to the calendar every year, it also identifies the festive occasions and washes these buildings with theme based colours during special occasions /festive days

The illumination of the above sites is a perfect blend of heritage preservation and modern lighting techniques. It accentuates the architectural brilliance of these heritage buildings while providing a serene and majestic atmosphere at night. This subtle yet impactful lighting turns the palace and other buildings into a glowing symbol of Gwalior's royal past, making it a must-visit landmark during the evening hours.

AUTHOR : JAQUAR & CO. PVT. LTD

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Exploring Bright Ideas for the Future with Eveready Lighting Spotlight



Eveready Lighting Spotlight, a YouTube series highlighting various effects of lighting in spaces, took a step forward by launching its second Eveready Lighting Spotlight Series in Chennai recently. From enhancing functionality to creating captivating atmospheres, lighting plays a pivotal role in shaping the spaces we inhabit. Exploring the same, the event held in Novotel Chamiers Road, Chennai delved into the world of lighting with engaging panel discussions and lively meetings.

The Eveready Lighting Spotlight series in Chennai featured four engaging panel discussions covering various topics related to lighting and well-being to human-centric lighting. These

discussions invited notable people from the design industry fostering a dialogue on emerging trends and solutions. The event was also attended by Mohit Sharma (BU Head, Eveready Lighting) along with his team.

The first panel discussion emphasized on 'How Residential Lighting Shapes Mood and Well-being in Modern Homes' exploring the impact of lighting in residential designs. The moderator was Ammaar Aziz Chowdry from ED + Architecture with panelists like Baanumathi of Ba.li.ka, Dr. Ponni M Concessao, Founder and Partner of Oscar, Ponni & Rahul Architects, Inesh Sah of AWOL Design Studio, Madhu Mitha of WeBe Design Lab and Prashanth C Raju from CRR Architects,

the discussion was elevated to new levels of engagement. The panel delved into the essence of lighting in shaping mood and well-being in modern homes while adhering to the needs of the occupants.

The second panel discussion focused on 'The Role of Adaptive Lighting in Enhancing Commercial Spaces' with emerging professionals from the industry. The discussion was brought together by Sejal Chauhan from sc.rypt Interiors, Abhinandan Jamad from Storey Inside Interiors, Jerry Meshach J from Dwellion Architects, Anuradha Desikan of ADVA Architects & Consultants and Mridula S. Chowdry of ED + Architecture, sharing expert insights on adaptive lighting. The

discussion highlighted the idea of adaptive lighting and how it enhances commercial spaces in the modern landscape.

The third panel discussion shed light on 'Know What Does the Future Hold for Smart and Interactive Lighting'. The panelists included Bharath Kumar of Bharath Design Solution, Raghveer Ramesh of Studio Context, Karran Kumar of AWOL Design Studio, Ifthikhar Ilyas of LiteLab, Ekta Agarwal of FOAID Designs, and Malarvizhi A of Architecture WIP, sharing their perspectives on Smart Lighting. The discussion offered a glimpse of the future where smart and interactive lighting would be a preferred choice for people, enhancing convenience and ease of use.

The final panel discussion was on 'Human-Centric Lighting: Designing Workspaces for Optimal Productivity' moderated by Amardeep Dugar from Lighting Research & Design. The discussion invited various experts: M Uma Chakkaravarthy, HoD, Meenakshi School of Architecture, Meenakshi College of Engineering, KK Nagar, Chennai, Gokulamurali KN of Edifice Consultants Pvt. Ltd., Sundar Velan of dofx Architecture, Sunayana Subbiah of Dius Design Consultants Pvt Ltd, Pavitra Venkatesh of Mahindra Lifespace Developers Ltd, V.S.Vigneswar of Architecture plus Value and Suraksha Acharya of Midori Architects to explain the importance of human-centric lighting. The panel delved into designing workspaces for productivity and how lighting plays an important role in the same.

Eveready Lighting also announced that Eveready SPOTLIGHT will also be



available as a YouTube series to broaden the audience appeal. In addition to interviews with industry experts and recordings of the panel discussions, this series will offer viewers a thorough grasp of the themes covered. A wider audience will be able to interact with the

content, pose questions and stay informed about the most recent developments and trends in the lighting sector.

AUTHOR: EVEREADY INDUSTRIES INDIA LTD.

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BRICS Smart Lighting Industry Summit Held in China



The BRICS Smart Lighting Industry Summit and the 11th Meeting of BRICS SSL Collaboration Working Group was held from 17-19 July in Shenzhen, China and was organized by the Secretariat of BRICS SSL-WG (the Secretariat of ISA). All the invited delegates were from R&D institutes and SSL industries of BRICS countries - Brazil, Russia, India, China and South Africa as well as BRICS+ countries like Thailand, Vietnam and Belarus. The meeting was attended by about 100 participants which included those that participated in online mode.

This meeting started with the opening remarks of Ms. Pei Li (Director, International Organizations and Multilateral Cooperation Division, Ministry of Science and Technology of China) followed by Dr. Jianlin Cao (President of ISA and former Vice Minister of Ministry of Science & Technology) and Ms. Olga Grekova

(General Director, APSS of Russia)

The focused agenda was to discuss on current situation of SSL markets in BRICS countries and SSL international standardization among these countries.

A: Current situation of SSL market in BRICS countries – which included a focused discussion on smart lighting technologies, wireless communication, market trends and development status in BRICS and BRICS+ countries and presentations of experts on various smart lighting systems, including road lighting, DALI systems, mobile solar products and the smart pole industry in China.

B: Discussion on SSL international standardization among BRICS and BRICS+ countries - including the challenges on standardization across BRICS countries and different regulatory requirements.

Mr. Hrishikesh Ta, (Vertical Head R&D-Lighting from Bajaj Electricals Limited) and Mr. Santosh Agnihotri, General

Manager & Head (Quality & Technical) of Orient Electric Limited, participated in the meeting and represented India on both different topics.

Mr. Hrishikesh Ta presented the current market size of SSL industry in India and future potential. He also informed the gathering about government initiatives like UJALA, SLNP, PLI scheme and other schemes to promote lighting in India and also discussed the challenges and opportunities in the lighting industry as well as emerging and future technologies. Mr Ta informed those present that the SSL market in India had been growing rapidly and that the implementation of schemes such as UJALA had led to widespread adoption of LED bulbs in households, while the BEE's energy efficiency labelling program helped consumers to get an energy efficient product. Even though the market for SSL was expanding across various sectors including residential, commercial, industrial, and

outdoor lighting he mentioned that there are still challenges such as the need for further cost reductions and technological advancements to make SSL more affordable and accessible to a wider population. In conclusion he summarized by stating that overall, the SSL market in India shows great potential for continued growth and development.

Mr. Santosh Agnihotri, General Manager & Head (Quality & Technical) of Orient Electric Limited, India made a presentation on “The SSL standards in India”. He began by stating that the SSL market in India is growing rapidly with government initiatives such as promoting energy-efficient and safety compliant products. The power ministry through BEE have upgraded the star rating criteria, which has resulted in introduction of higher energy efficient products into market. Currently the star rating band is from 90 lm/W to 150+

lm/W with respect to 1-Star to 5-Star LED Bulbs. These upgraded guidelines were effective from 1 July 2023. He further informed those present that it is a mandatory requirement to comply with the compulsory Registration Scheme (CRS) and all lighting products must be compliant with the applicable safety standards.

Currently the government has identified all the lighting products under e-waste management rules-2022, so producers are responsible for its safe disposal and also appraised upon the current situation of implementation of CPCB's (Central Pollution Control Board) e-waste rules where for the first time in India a common digital platform has been



created to connect producers and recyclers.

The other delegates also made several presentations during the meeting. These sessions provided a comprehensive overview of SSL industry status, challenges, and innovations and provided insights into various SSL developments, research projects and government strategies across BRICS and BRICS+ countries.

Dr. Sergio Celaschi (Brazil) - 'Status and trends of SSL in Brazil': discussed the new regulations for SSL safety and market fairness, the rapid growth of market share of LED and Brazil's lighting industry structure and market dynamics. He highlighted the Brazil-China SSL Joint Innovation Centre project and outlined Brazil's SSL standards and certification challenges, noting the need for more accredited labs and the role of the China-Brazil SSL Joint Innovation Centre.

Mr. Georges Blum (Brazil) - 'Import data and quality concerns in Brazilian lighting products': presented the data on lighting product imports and highlighted quality issues and market challenges, seeking solutions from BRICS counterparts.

Ms. Yan Lu (China) – 'Smart Road lighting in China': gave an overview of smart road lighting systems, from basic sensor-based solutions to advanced smart pole and city concepts, including solar and energy storage technologies.

Ms. Yuanyuan Xu (China) – 'China's SSL industry and development': appraised on the current situation, recent trends and shared insights from two decades of development. She covered the development of SSL standards in China, emphasizing the role of various types of standards in industry growth.

Dr. Jiajie Fan (China) – 'SSL Reliability Modelling using Digital Twins': presented the use of Digital Twin technology for modelling the reliability of SSL systems, covering lifecycle aspects from material characterization to health monitoring.

Ms. Wu Yong (Spark Link Alliance) - 'Spark Link technology for smart lighting': introduced Spark Link's short-range wireless communication technology, emphasizing its advantages in reliability, coverage and application in smart lighting.

Dr. Anton Chernyakov (Russia) – 'Micro-LED and Sino-RUS collaboration': discussed on micro-LED developments in Russia, collaboration with Fudan University, and the potential of “beyond lighting” applications.

Mr. Dmitry Yezhov (Russia) – 'Introduction of the Foreign Trade Centre of the Ministry of Industry and Trade of Russia': expressed the Centre's commitment to supporting and facilitating SSL development and trade activities among BRICS countries.

Mr. Sergey Lishik (Belarus) – 'Belarus-China SSL Project with Fudan University': discussed the project on CsPbI3 perovskite quantum dots, focusing on improving stability through advanced deposition technologies and potential areas for Belarussian-Chinese SSL cooperation.

Dr. Trofimov Yuri (Belarus) - 'SSL development in Belarus': presented the SSL market structure, key players, R&D directions and challenges in Belarus.

D: Mr. Jeremiah Mathobela (South Africa) – 'SSL industry status in South Africa': gave an overview on SSL standardization, regulation and testing capabilities in South Africa.

E: Mr. Nguyen Doan Ket (Vietnam) – 'Development Status of SSL Industry in Vietnam': gave an overview of Vietnam's growing SSL market, energy savings potential and future development policies, including targets for renewable energy and smart lighting adoption.

Dr. Acharawan Chutarat (Thailand) - 'SSL Development in Thailand': described Thailand's government policies and strategies for SSL, including investments in smart electronics, the transformation of street lighting in Bangkok and the potential for CO2 reduction through smart LEDs.

There were several other presentation made on international developments by various special invitees to the meeting.

Mr. Chao Fang of EXC-LED Technology Co., Ltd., China – 'Innovations in Landscape & Road Lighting': introduced advanced AI-driven control solutions for landscape lighting and a modular intelligent cloud cabinet for road lighting and highlighted EXC's high-efficiency lighting modules and smart management solutions.

Mr. Jack Chen of LEDVANCE Operation & Management, China – 'Sustainability in LEDVANCE Products': described LEDVANCE's shift towards circular sustainability practices, focusing on lifecycle considerations from manufacturing to disposal.

Ms. Cherry Li of EVERFINE Institute of Optoelectronics, China – 'Measurement and Standardization for Smart Lighting': covered advancements in measurement technologies for efficient and intelligent lighting, including new standards for flicker, electrical harmonics and standby power.

Ms. Poet Li of Inventronics, China - 'Innovation in DALI Lighting Systems': discussed the evolution and benefits of DALI lighting systems, including energy efficiency, high reliability and ease of integration. She also highlighted Inventronics' global sales figures for DALI devices.

Ms. Lijuan Chen of Shenzhen Jinhong Lighting Co., Ltd., China - 'Innovative LED Automobile Lighting Applications': explored mobile solar lighting solutions and their applications in various sectors like mining, military and emergency situations.

Mr. Tony Jiang of Tuya Smart, China - 'Total Solutions for Smart Roadway Lighting': provided insights into the growing market for smart LED streetlamps and smart poles. He also introduced Tuya Smart's comprehensive solutions for smart lighting, including software and hardware offerings and compared international trends and protocols.

Michael J. Scholand of IEA 4E – "Impact of SSL on global electricity Consumption": With LED technology reducing lighting electricity use from 16.5% to 12%, further efficiency gains could lower this to 8%. IEA 4E's new Smart Sustainability in Lighting and Controls (SSLC) Platform aims to further reduce energy use through smart systems, addressing market assessments, lighting impacts and support for standards.



In conclusion, Mr. Ruisheng Yue briefly summarized the session as full of awareness on standardization systems of each country by the presentations and got to know who are responsible to develop the standards. He also said that the session throws insight on the current standards which were currently in place and the dominant standards that have been adopted. He also said that the session made everyone aware of the needs and challenges of the standards in BRICS countries such as in the field of smart lighting and “beyond lighting”, which was the direction that the

current Group should make efforts to pursue. The summit and working group meeting concluded with site visits to Shenzhen EXC-LED Technology Co., Ltd. and Unilumin Group, showcasing advancements in smart lighting technologies and manufacturing processes. The event provided valuable insights into SSL developments, industry trends, and international collaboration opportunities.

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Biophilic Lighting and Melanopic Lighting Driving Trends in Indoor Commercial Lighting

With a focus on Sustainability, Biophilic lighting designs and Melanopic lighting concepts are driving the modern trends in Indoor commercial lighting

The growing awareness of benefits of sustainability and proximity to nature is influencing lighting design concepts. The impact of global warming is causing havoc in nature. For the survival of our human race and our planet, each of us have a responsibility to clean up the environment and take immediate measures to make it more habitable for future generations. In this regard, nations across the globe are coming together and taking definitive steps to define various standards, rules and regulations to protect our planet. Industries catering to such needs are now getting aligned to the new regulations on sustainability.

Accordingly, in the lighting industry, the demand for sustainable lighting solutions that reduce energy consumption and minimize the carbon footprint, is growing very fast. In addition to that, the trend of Biophilic lighting designs that dwells on connection between humans and nature, is also impacting lighting design. The requirement of Biophilic design is stemming out of the fact that because of work and occupational requirements, we are forced to be confined to indoors in artificially created ambience for long hours each day, whereas as a species, we are naturally more comfortable when we are in the midst of nature, under sunlight. Thus the latest trend is that we are trying to bring in various elements of nature into our work space. Biophilic design basically follows this philosophy. It mimics natural light patterns and colour temperatures thus controlling the generation of hormones in a similar pattern as would have been done under sunlight. This in turn helps to create a more comfortable atmosphere for the occupants, thus enhancing their productivity and work efficiency. Thus,

biophilic lighting design has far reaching impact on improving cognition, enhancing the mood and well-being of the occupants of an indoor environment. Biophilic lighting, through smart lighting controls and daylight integration also plays a major role in sustainability by saving energy.

Various elements of nature, for example, a waterfall on a wall, can be artificially created at an indoor space through projection lighting. No other infrastructure or additional civil structures are required to be constructed. We can also simulate the sound of birds chirruping, give a feeling to the occupants as if they are sitting on a beautifully manicured green lawn or a landscape etc through light and sound effects.

A body stressed by factors like poor lighting, noise and confinement in an artificial environment takes longer to heal. Thus Biophilic lighting can have a major impact in the healthcare segment. It becomes a win-win for both, the patient as well as the hospital authorities. For the patient, the recovery time gets reduced and hence the medical expenses decreases while the hospital authority gets more patient rotations per bed.

As per the latest trends in indoor lighting, the focus is more on creating positive biological impact and thereby the well-being of the occupants through lighting and good interior décor rather than just considering the functional aspects of lighting.

Going by the trend for indoor spaces, along with Biophilic design, a new concept called Melanopic lighting is getting more and more popular. To understand the concept of Melanopic lighting, we need to know that there are

two types receptor cells in our retina. One type is image forming visual function cells like Rods and Cones while the other group of cells is Melanopsins which are non-image forming cells. They are G family coupled receptors found within the Ganglion cell layer and they play an important role in non-image forming visual functions including hormone secretions, controlling the circadian rhythm and cognitive processes.

The non-image forming cells play primary role in Melanopic lighting. These cells, basis the wavelengths that fall on our retina, send signals to the 'Suprachiasmatic Nucleus (SCN)' part of our brain which sits in a region of the brain called the Hypothalamus. The SCN controls the release of hormones from our pituitary gland and acts as our Circadian clock. It regulates many biological rhythms like sleep-wake cycle, body temperature and hormone levels etc. Thus, few hormones generated in our body are dependent on correlated colour temperature (CCT and hence the wavelength). Therefore at various times of the day as the sun follows its trajectory, different types of hormones (E.g. Oxytocin – positive hormones, releases stress, helps feel good; Melatonin – helps us to relax and manages our sleep-wake cycle and many other hormones) are generated in our body system that define the Circadian Rhythm of the body.

Historically, from stone age days, humans have been most comfortable, effective and energetic in an outdoor ambience when they have been specially subjected to natural daylight. As the current lifestyle forces us to be indoor for most part of the day, it is becoming very important for us to be under such a system that mimics natural scenarios as

much as possible.

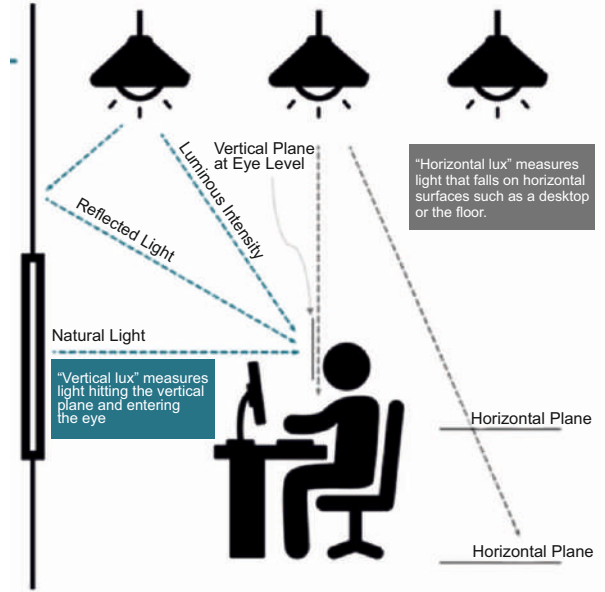
Current indoor lighting is more focussed on systems / solutions which help support the circadian rhythm of the occupants. "Well Standards" that focus more on the well-being and the comfort of the occupants is becoming more and more popular. Focus is more on lighting up the entire space (spatial or volumetric lighting) rather than directing light on just the work area. It is seen that with spatial lighting, the vertical illumination improves substantially. This in turn reduces the requirement of average lux on the table top / work space. As a result, the ratio of vertical to horizontal lux level is improved which in turn reduces contrast factors leading to an improved comfort in the work area.

A new concept called 'Activity Based Lighting Solution' (ABLS) is also gaining popularity. This is based on the fact that a human resource performs various types of activities throughout his/ her long office hours and depending upon various activities that he/ she performs, there are various lighting ambiances created by various lighting solutions suiting the mood of the resource. This improves the productivity of the resources. The figure shows activity-based lighting in a Pod. Depending upon various activities, from the same luminaire, different distribution and different level of lighting can be produced.

The lighting industry will experience a

surge in integrating lighting controls with lighting solutions thus creating an intelligent and dynamic lighting atmosphere where controls will play a pivotal role. With the emergence of smart and automated lighting management solutions, controls are set to undergo substantial growth. These advanced controls offer features like scheduling, occupancy sensing, plug load controls, demand response and daylight harvesting resulting in enhanced efficiency and reduced energy costs for buildings. The integration of sensors, wireless communication and digital controls enables remote monitoring and management of lighting systems providing added convenience and control. A trend of integrating lighting controls directly into the luminaires is also increasing.

The lighting controls industry will see a significant increase in the use of data analytics and AI technologies. These tools will enable lighting systems to be optimized reducing energy consumption and provide valuable insights into occupant behaviour. The integration of lighting controls with Building Management Systems (BMS) is rapidly gaining popularity. This approach offers



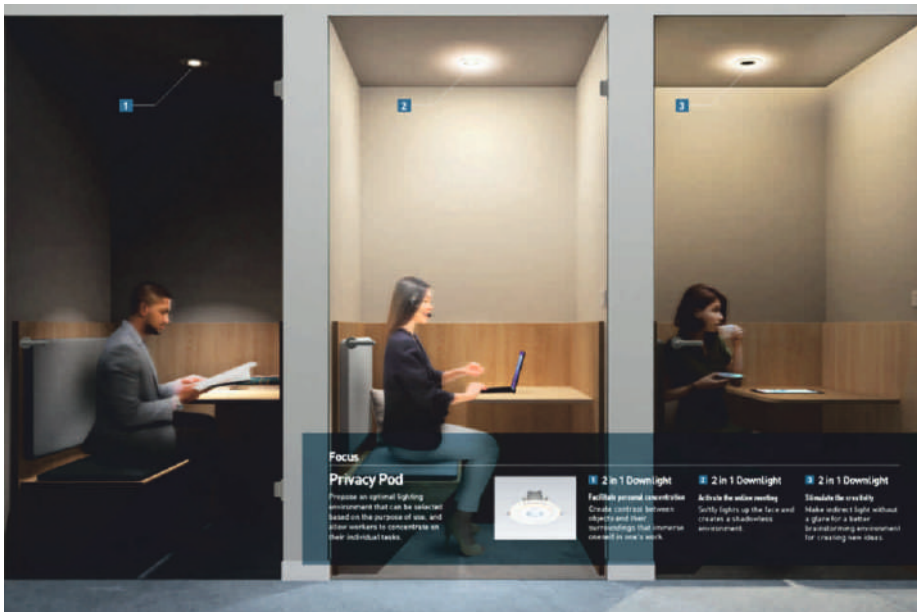
centralized management system for all the building systems including HVAC, security, lighting etc. With this, the facility management team can remotely monitor and control lighting systems, optimize energy consumption and enhance occupant comfort and productivity. The growing adoption of IoT technologies is driving this trend, enabling seamless communication and integration between building systems.

These controls will increasingly migrate to wireless solutions. This will give more flexibility and convenience to the lighting / interior designers and the architects to change the furniture and space layout even at a later time to suit the ever-demanding requirements of the clients.

In conclusion, lighting concepts have come a long way from simply providing illumination. With increasing demand for sustainability solutions and growing trend of biophilic lighting design, lighting has become an essential element in creating a comfortable and environmentally conscious space. As we evolve, architects and designers should consider the impact of lighting on mood and well-being pushing the boundaries of design and sustainability to create truly balanced and harmonious spaces.

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Smart
CABLE CONNECTION & PROTECTION SYSTEMS
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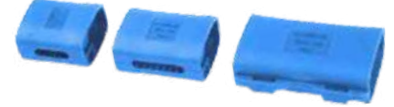
Leelo Connector



Push Fit Connectors



IP68 Wire Connector



Waterproof Gel Connector



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SMD Connector



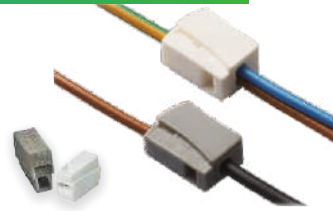
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Solder Butt Connector



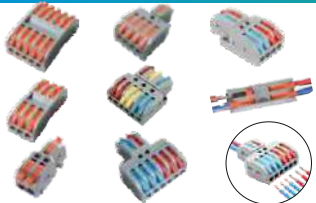
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Easy-Link Lighting Connector



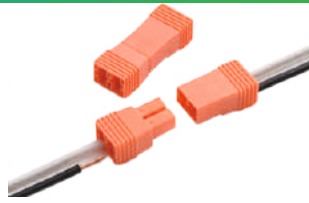
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Releasable Wire Connectors



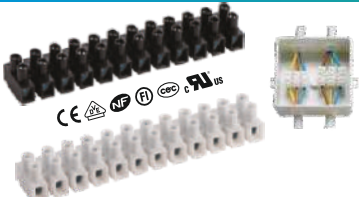
End Type Connector



Luminair Disconnect



Conduit Glands



Terminal Blocks



Waterproof Wire Connector



Vent / Breather Plugs



Terminals



Waterproof Junction Boxes

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Signify lights up a premium villa in Indore with WiZ Connected Lighting

Lighting is an essential element in any home, influencing not only the functionality of spaces but also the overall ambiance and aesthetic appeal. Proper lighting can transform a room, making it feel more welcoming, spacious, and comfortable. It plays a critical role in our daily activities, from enhancing productivity in workspaces to creating a relaxing atmosphere in living areas.

Thoughtful lighting design is key to creating a harmonious and efficient living environment. Hence, bringing in the best of industry innovations and technology Signify being the lighting leader was the first choice for the premium villa in Whitefield Society, Indore. The Whitefield Society is one of the premium housing societies in Indore wherein each bungalow is massive with a 24,000 Sqft area. It is one of the most prestigious societies wherein customers look for the best-in-class housing experience bundled with premium-ness, quality, and durability.

The Concept: Connected Lighting for the ever-evolving customers

Connected lighting systems allow homeowners to control lighting remotely using smartphones, tablets, voice assistants, or dedicated smart switches. The lighting can be adjusted based on time of day, occupancy, or personal preferences, providing convenience, energy efficiency and customizable ambiance, offering an innovative solution for home management with Philips WiZ Smart Wi-Fi connected lighting.

Convenience and Control: With connected lighting, residents can control the entire house's lighting from a single device. This is beneficial and convenient in large homes where walking through multiple rooms or floors to turn lights on or off needs to be as per the user's

choice.

Energy Efficiency:

Smart lighting systems can significantly reduce energy consumption. Features such as timers, space sense technology, and dimming capabilities ensure lights are only on when needed, leading to lower electricity bills and reducing the overall carbon footprint.

Customizable Ambiance:

With adjustable color temperatures and brightness levels, connected lighting allows homeowners to create the desired ambiance for different occasions. From warm lighting for cozy family dinners to bright red & blue lights for parties, the options are virtually endless.

Hence, Wiz is the ideal lighting solution that enhances the comfort, warmth, and happiness of your home. It transforms every home into a smart lighting home bringing ease, customization, and innovation at your convenience.

Designing a connected lighting plan for 24,000 Sqft Bungalow with WiZ

For a house of this size, a well-thought-out lighting plan is essential, the team went to the drawing board to bring out the best vision basis the key requirements. The first step was zoning and layering, wherein the house was divided into zones (e.g., living room, kitchen, bedrooms, outdoor areas) to determine the right choice of lighting for each. Extensive layering was also considered as per the different types of lighting—ambient, task, and accent lighting—to create a dynamic and functional environment.



Amping up the living areas, dimmable smart bulbs and fixtures were used to adjust brightness levels based on the time of day or activity. For the kitchen and dining rooms, task lighting for counters and dining tables was combined with ambient lighting for overall illumination. For the bedrooms, the Signify team gave soft, warm lighting for relaxation and reading with automated systems that gradually dim lights at bedtime. In the bathrooms, bright, white lighting for grooming and softer lighting for relaxation were used and in the home office study-focused lighting for productivity, with options for dimming during video calls was added.

WiZ is the best example to have connected lighting across all rooms offering the much-needed solutions offering unparalleled convenience, efficiency and customization for large homes, enhancing the living experience for customers across India.

AUTHOR: SIGNIFY INNOVATIONS INDIA LIMITED

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ELCOMA Third GB Meeting of 2024 Held in Delhi

The third Governing Body Meeting was held on 19th July 2024 at Marigold Hall, India Habitat Centre, New Delhi, which was sponsored by LEDVANCE Private Limited. 15 ELCOMA GB members were present in the meeting. Mr. Avinder Singh, ELCOMA President, after reading the minutes of the previous Governing Body meeting held on 2nd May 2024 which were approved, proceeded to start the meeting. After the President's address, Mr. Amal Sengupta, Secretary General of ELCOMA read out Secretary General's points to the GB. The IWG committee report was presented by Mr. Nitish Poonia, chairperson of the IWG committee. Mr. Nitish Poonia also presented the highlights of the Technical Committee in the absence of Committee chairperson, Mr. Santosh Agnihotri.

A discussion on Light India + LED Expo 2024 initiated by Mr. Amal Sengupta was held and Ms. Sudeshna appraised the GB members on the plan for organizing ELCOMA's first conference of 2024, which was finalized by the Conference Core Committee. The theme of this conference will be 'Lighting the Future, Light of the Future' which will essentially aim to establish India as a top thought leader, talent and sourcing destination. This conference will be held in collaboration with Messe Frankfurt during the Light & LED Expo India from 21st -23rd November 2024. The Conference date is finalized as 22nd November 2024 at Yashobhoomi Convention Centre, Dwarka, New Delhi.

Mr. Gerald Strickland, Secretary General, Global Lighting Association (GLA) updated to the GB members on the various activities being carried out in the global association.

The meeting came to an end with a vote of thanks by the President. Mr. Jitendra Agrawal volunteered to sponsor the next GB/AGM by Surya Roshni Ltd, which will be held in Delhi in 4th October 2024.



Self-reliance India in LED Lighting: Where are We?

The lighting industry in India has completed a long journey and it has been transforming dynamically while keeping pace with the recent technological developments. This article explores the journey, challenges therein and the future of the domestic manufacturing of LED lighting.

Lighting technologies have completed a long journey. In 2007, it was estimated that lighting for general illumination accounted for more than 8% of the world's primary energy consumption. However, the technology used in traditional lighting (e.g., incandescent, fluorescent and high-intensity discharge lamps) was not very efficient and converted less than 25% of the input energy into useful light. Solid-state lighting (SSL) is a rapidly developing technology whose efficiency of converting electricity into white light may reach 50% in the next few years. Additionally, this technology will be used in many applications such as Visible Light Communication (VLC) in the future. The above reasons forced researchers to find cost-effective energy-saving solutions and over the years, the Light-Emitting Diode (LED), which is a form of SSL has become a part of our daily lives.

LED is driving a significant transformation in the lighting industry by offering enhanced energy efficiency, durability, design flexibility and advanced features. As technology continues to evolve, LED lighting is likely to play an increasingly larger role in shaping the future of lighting. Moreover, LED lights have found applications in various technologies beyond traditional illumination. The characteristics of LEDs, such as their energy efficiency, compact size and ability to emit light of different colours, make them suitable for a wide range of applications.

The manufacturing of LED lighting

products in India has gained momentum in recent years due to the increasing demand for energy-efficient and eco-friendly lighting solutions. The Indian government's initiatives to promote the use of LED lighting and reduce energy consumption have further boosted the LED industry. Overall, the manufacturing of LED lighting products in India is a dynamic and growing sector, driven by a combination of government support, market demand and a focus on quality and innovation. The industry's continued development contributes to energy conservation, environmental sustainability, and the creation of employment opportunities in the country.

SELF-RELIANCE INDIA IN MANUFACTURING OF LED LIGHTING

India has been making significant efforts to promote self-reliance in manufacturing, including in the production of LED lighting. The "Make in India" initiative, launched by the Indian government, has played a crucial role in this endeavour.

Domestic Manufacturing - The Indian government has been promoting the domestic manufacturing of LED lighting products through various incentives, subsidies, and policies. For example, LED Lights and LED components are covered schemes like Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS), notified by the Ministry of Electronics and IT on 01.04.2020 and the Production Linked Initiative Schemes (PLI) for White

Goods (Air Conditioners and LED Lights) manufacturers in India, notified by Department for Promotion of Industry and Internal Trade on 16.04.2021. These initiatives have encouraged both domestic and international companies to establish manufacturing units in India.

Energy Efficiency - LED lighting is known for its energy efficiency and the Indian government has set ambitious targets to promote LED adoption for both residential and commercial purposes. The UJALA (Unnat Jyoti by Affordable LEDs for All) program is a notable example of such an initiative, where LED bulbs are distributed at subsidized rates to encourage energy-efficient lighting.

Reducing Imports - One of the key objectives is to reduce India's dependence on imported LED lighting products. This not only fosters self-reliance but also reduces the trade deficit. The government has revised duty structure, exploit safety and quality standards to promote locally manufactured LED products.

Incentives and Subsidies - The government offers incentives, subsidies and favourable policies to attract investment in LED manufacturing. This includes reduced taxation, financial support, and support to EoDB (Ease of Doing Business).

Research and Development - Investment in research and development (R&D) in LED technology has been a focus area. The government encourages research institutions and companies to innovate in the LED lighting sector,

which can lead to the development of new products and cost-effective solutions.

Skill Development - To meet the demand for a skilled workforce in LED manufacturing, the government has also focused on skill development programs to train individuals in the relevant technologies and manufacturing processes.

Safety and Quality Standards - The government has exploited safety and quality standards for LED lighting products, ensuring that products meet international quality benchmarks. This helps in building trust in Indian LED products both domestically and internationally.

Export Promotion - While the focus is on self-reliance, the government also aims to make India a global hub for LED manufacturing. It encourages companies to manufacture in India not only for the domestic market but also for export.

Presently LED Manufacturing is only 2.5% of the total electronics sector, but has great potential. According to market research, the Indian LED lighting market is expected to grow at a CAGR of 23.6% from 2019 to 2025. Many important initiatives such as UJALA and the National Street Lighting Program (SLNP) still remain the biggest driving forces in this field. The purpose of these measures is to encourage consumers to use LED bulbs instead of traditional lighting such as incandescent bulbs, CFLs and halogen lamps. For example, under SLNP, the government has replaced more than 13.4 crore

streetlights in India since November 2019.

Challenges in the way of self-reliance in LED lighting

While India has made significant strides in promoting self-reliance in the manufacturing of LED lighting, there are several challenges that the country is facing in achieving full self-sufficiency in this sector. We can broadly segregate the challenges into two categories, general challenges and technological challenges.

GENERAL CHALLENGES

Heavy Dependence on Imports: India still relies on imported components and raw materials for LED manufacturing. Reducing this dependence is a significant challenge, as many critical components (e.g., LED packages, driving electronics, etc) are sourced from other countries, primarily China.

Global Competition: The LED lighting industry is highly competitive globally, with many established players. Indian manufacturers face stiff competition from international brands, which often have a technological and cost advantage.

R&D Investment: While there have been efforts to promote research and development in LED technology, India still lags behind in terms of innovation and cutting-edge technology. Insufficient investment in R&D can hinder the development of high-quality, state-of-the-art LED products.

Quality Control and Standards: Maintaining consistent quality in LED lighting products is crucial for building

trust among consumers. Ensuring that all manufacturers adhere to quality standards is a challenge and substandard products can undermine the industry's reputation.

Supply Chain Challenges: India faces supply chain issues, including transportation and logistics challenges. These can result in delays, increased costs, and supply chain disruptions, affecting the overall efficiency of manufacturing.

Cost of Production: While India offers a lower cost of labour compared to many Western countries, the cost of production can still be relatively high due to factors such as infrastructure costs, regulatory compliance, and energy costs.

Infrastructure and Power Supply: Inconsistent power supply and inadequate infrastructure can impact manufacturing operations. A stable and affordable power supply is essential for LED manufacturing, which relies on electricity-intensive processes.

Economic Uncertainties: Economic fluctuations and currency exchange rate variations can impact the cost-effectiveness of LED manufacturing. A stable economic environment is crucial for long-term planning and investment.

Environmental Regulations: LED manufacturing involves the use of hazardous materials (unlike compact fluorescent lamps, LEDs are mercury-free, but they do contain arsenic and lead, which carry a higher toxicity potential), which require strict environmental compliance. Meeting these regulatory requirements can be challenging and may increase production costs.

Scale and Volume: Achieving economies of scale is important for cost-effective manufacturing. Scaling up production to meet both domestic and international demand is a challenge, particularly for smaller manufacturers.

Skills Shortage: While there are skill development programs in place, there may still be a shortage of skilled labour

Product Segment	USD Bn
Mobile Phone	38
IT Hardware (Laptop/Tablets)	4
Consumer electronics (TV, Audio, Accessories)	10
Strategic Electronics	4.25
Industrial Electronics	11
Wearable & Hearable	0.25
PCBA	0.6
Auto Electronics	7
LED Lighting	2.5
Electronics Components	9.5
Total Manufacturing	87.1

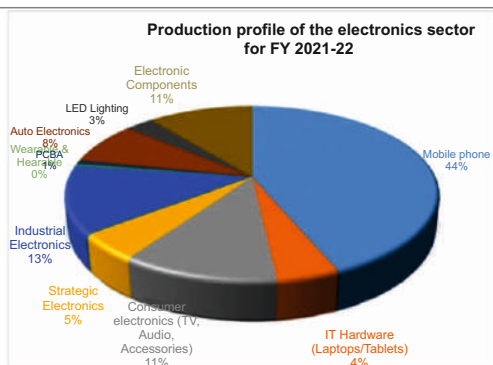


Figure 1. Share of LED manufacturing and major verticals of the electronics sector

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SPECIAL FEATURE

with expertise in LED manufacturing and technology.

Lack of Integrated Ecosystem:

Building a complete ecosystem for LED manufacturing, including the production of critical components, such as semiconductors and phosphors, is a complex and time-consuming endeavour.

TECHNOLOGICAL CHALLENGES

Component Availability: The LED industry relies on various components, such as LED chips, phosphors, and driver circuits. India faces challenges in procuring these components, as many of them are imported. Developing a domestic supply chain for these critical components is essential for self-reliance.

Technological Innovation: LED technology evolves rapidly. Keeping pace with advancements in LED chip design, heat management, and optical design can be challenging for Indian manufacturers. Investing in research and development to stay at the forefront of LED technology is crucial.

Quality Control: Ensuring consistent quality in LED lighting products is essential for customer satisfaction and competitiveness. Maintaining high quality across different batches and production lines can be a technological challenge, especially for smaller manufacturers.

Efficiency and Heat Management: LEDs are sensitive to heat, and efficient heat management is vital for maintaining LED lifespan and performance. Developing and implementing effective heat management solutions can be a technological challenge, especially in hot and humid climates.

Colour Consistency: Achieving consistent colour temperature and colour rendering across LED products can be challenging. Variability in LED chip quality and the phosphor coating process can lead to colour inconsistencies.

Smart Lighting Integration: With the rise of smart lighting systems, integrating advanced control systems, sensors, and

connectivity into LED products requires technological expertise. This includes software development, communication protocols and compatibility with IoT platforms.

Environmental Considerations:

Meeting environmental regulations and sustainability goals can be challenging. LED manufacturing processes can generate hazardous waste, and adhering to environmentally friendly practices while remaining cost-effective is a technological challenge.

Testing and Certification: Ensuring that LED lighting products meet national and international standards and certifications requires advanced testing facilities and expertise. Developing and maintaining such facilities can be a technological challenge.

Energy Efficiency: While LEDs are inherently energy-efficient, continuous improvements are needed to reduce power consumption further. Developing more efficient LED chips and driver circuits is an ongoing technological challenge.

Miniaturization and Form Factors:

Many applications, such as mobile devices and automotive lighting, require compact and customized LED solutions. Developing and manufacturing small, specialized LED products can be a technological challenge.

Harmonizing with Power Supply: Inconsistent power supply in certain regions of India can pose a challenge for LED manufacturers. Ensuring that LED products are compatible with varying power quality is important.

Customization and Specialized Products: Meeting the demand for specialized LED lighting products tailored to specific industries or applications can be a technological challenge, as it requires flexibility in design and manufacturing processes.

WAY FORWARD

Despite these challenges, India's initiatives and policies aimed at promoting self-reliance in LED

manufacturing are making progress. The government and industry stakeholders are working together to address these issues and create an environment conducive to domestic LED manufacturing and innovation. A recent report indicates that with the support of the government in the form of ambitious national Semiconductor projects and initiatives of industry, India is going to penetrate the global market of the semiconductor industry. According to the report, India will make huge strides in semiconductor manufacturing with small and inexpensive LED driver chips.

To overcome these technological challenges and promote self-reliance in LED manufacturing, India needs to invest in research and development, encourage collaboration between industry and academia, and provide incentives for the development of innovative technologies and processes. Additionally, fostering a supportive ecosystem that includes specialized suppliers and testing facilities can help Indian LED manufacturers stay competitive and technologically advanced.

The futuristic technologies in LED lighting are expected to offer improved energy efficiency, innovative designs, and enhanced functionality for a wide range of applications, from residential lighting to smart cities and beyond. As technology continues to advance, LED lighting is likely to become even more versatile and integrated into our daily lives.

In a nutshell, India's efforts to promote self-reliance in LED lighting manufacturing are in line with its broader goals of reducing imports, creating jobs, and promoting energy efficiency. These efforts contribute to the growth of the LED lighting industry in the country and reduce its dependence on foreign manufacturers.

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Views expressed in this article are those of the contributors and do not necessarily reflect those of the editors or publishers

Design Recommendations for Lighting of Hockey Stadiums for Televised Events

A look at the new guidelines for Lighting Systems for Hockey Grounds

Hockey is the national game of India. We can see an increasing number of sporting fields getting ready for night games activity to promote sports in India under different schemes of the central and the state governments. Hockey is one such sports discipline. We also see a lot of development in digital TV technology in the last few years. As a result, it was imperative to look into the old FIH recommendation (Federation Internationale de Hockey) and to frame new guidelines for lighting up of Hockey turfs. The new guideline provides all the information needed to ensure that good result is achieved for television viewing, players, referees, match officials, spectators and for the environment. We all are aware of importance of lighting parameters like quantity of light, uniformity, colour temperature, colour rendering index and glare in sports lighting applications. But there few more parameters which come in reckoning such as vertical illumination in orthogonal planes, uniformity gradient, MAUR, Flicker and TLCI when it comes to international level television coverage.

Field of Play: for Hockey is the playing area that measures 91.4m by 55.0m. The perimeter margins that outside the playing area is generally kept at 5m at each end and 3m on each side.

Slow Motion Replay Zones (SMRZ) : The shooting circles and areas at either end of the field contained within 5m dashed lines.

Vertical Illumination towards Fixed Camera: Vertical illumination is light incidence on a vertical plane above the pitch. This is the lighting level primarily

used by TV cameras especially for long range cross field pictures. Unlike horizontal illuminance, both the position and orientation of vertical surface must be known. As the angle of illumination decreases, the lumen per square meter decrease as well until at grazing angles the surface is barely illuminated at all.

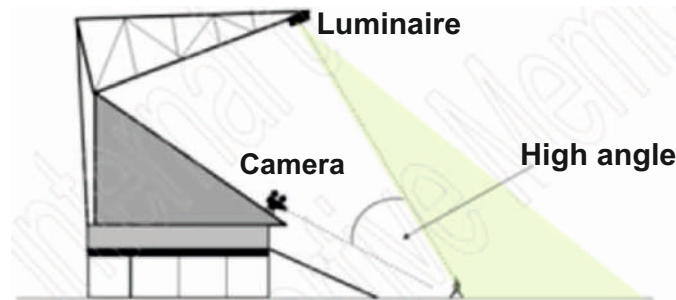


Fig : Low efficiency of illuminance towards camera

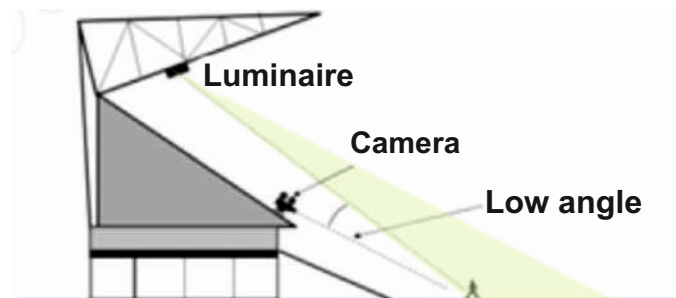


Fig : High efficiency of illuminance towards camera

It is important that the fixed camera positions are established before a lighting system is designed. The number, types and location of the cameras will differ event to event and broadcaster to broadcaster. The main fixed camera is used for live transmission of the game and is generally located along the centre line of the hockey field placed on the seating gallery. CIE 169 :2005 gives a general guideline for the position of main camera. The actual distance from the centre and the height of the camera is

site or stadium specific.

Orthogonal cameras are located at ground level on the field. These are used for measurement of illuminances to four orthogonal cameras.

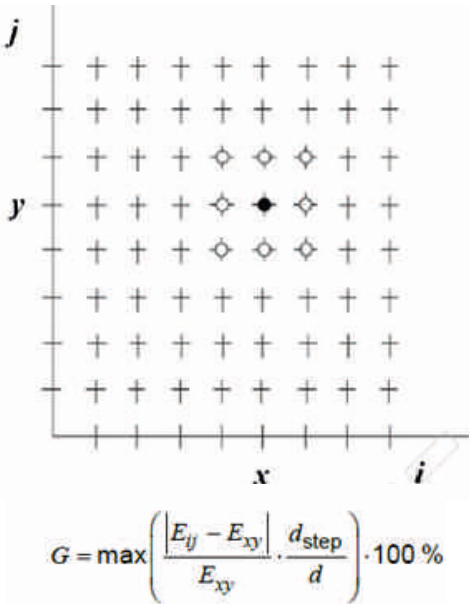
Measurements should be made with the photometric cell held at 90 degrees to the hockey turf. At each grid position measurements should be made in four directions as shown in the figure. Direction A should be towards the boundary containing the Main Camera position.

Uniformity Gradient: In the particular case where the camera is pointing directly in line (coincident) with the line of the athlete competing in a defined narrow longitudinal space, any dramatic change

in illuminance of the athletes will be noticeable, especially in case of slow-motion cameras. It is important therefore to keep the gradient of the illuminance towards these cameras as low as possible.

The uniformity gradient should be established for each main camera. For each grid point (x,y) the illuminance E_{xy} is compared with illuminance of adjacent grid points, E_{ij} . The uniformity gradient in a grid point (x,y) is defined as the maximum of $(E_{ij}-E_{xy})/E_{xy}$ for

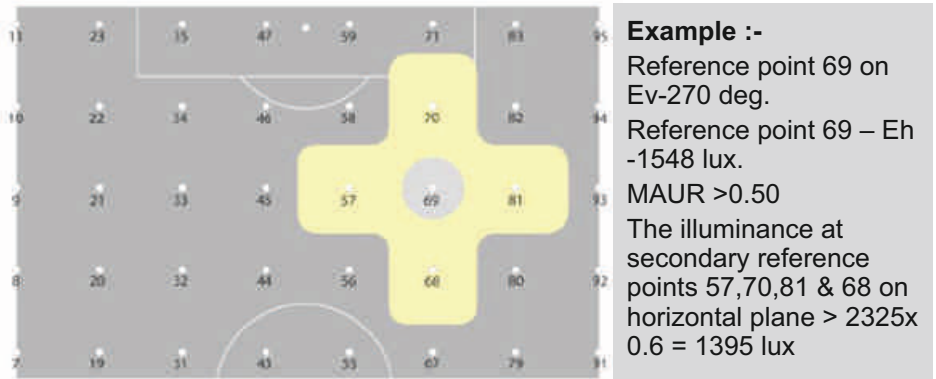
the eight surrounding grid points relative to the distance between points. The illumination gradient is expressed as a percentage change over the nominated distance.



Minimum Adjacent Uniformity Ratio (MAUR):

Any rapid change in the illuminance level on a given plane will cause camera exposure inconsistencies. During fast moving hockey matches, it is unrealistic to expect the camera settings to be changed successfully on a consistent basis when the camera and the subject are both moving rapidly. MAUR is used to ensure greater consistency in terms of camera exposure and thus greater freedom for the camera operator to provide dynamic pictures. MAUR is the maximum permissible difference between any two adjacent points on any given plane in any direction.

Flicker Factor: During broadcasts some lighting systems can cause the picture to flicker during super slow-motion replays. The flicker is distracting and impairs the viewer's experience so it should be eliminated where possible. The conditions that produce flicker will vary depending on the modulation of the flicker, the alternating voltage frequency and the camera frame rate. The term flicker factor refers to the amount of modulation of luminance on a given plane during a complete cycle. It denotes



the relationship between the maximum luminance value over a full cycle and is expressed as a percentage.

In all but the most extreme circumstances it is possible to eliminate the flicker that is seen during slow motion replays. While the number of frames per second will vary depending on the technology used, an illuminance system with a flicker factor less than 5% will eliminate perceived flicker for most technology used for sports broadcasting.

Flicker measurement should be done at each point of the measurement grid. If the direct meter measurement is not made flicker factor should be calculated using the below formula.

$$FF = \frac{E_{max} - E_{min}}{E_{max} + E_{min}} \times 100\%$$

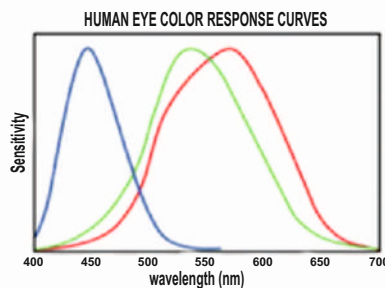
Televisions Lighting Consistency Index (TLCI):

Measures how accurately film and television cameras interpret colour under artificial light

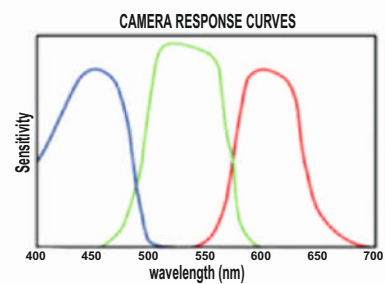
source. It is measured on a scale of 1 to 100.

Design Process

Every project is unique. So, it is difficult to propose a unique solution but broad guidelines can be set to approach a design process for hockey stadia illumination. The first thing is to decide the level of competition and its objective at the venue. This should be frozen by discussing with the stadium users. Detailed design inputs are required from the venue management, broadcaster, architects and knowledgeable hockey participants. The designer should look out for integration of lighting with existing or designed structures so as to ensure proposer aiming according to lighting design and maintenance of the luminaires. After installation of the luminaire aiming should be checked against the lighting design and measurements taken to ensure the results are in line with the requirements.



Human eye perceives colour by detecting wavelengths through photoreceptors in retina. This converts into signals that the brain interprets as specific colours.



Camera use series of sensors & filters that detect colour and translate into digital signals. These are processed into display.

FIH Lighting Recommendations

FIH has adopted three levels of lighting for broadcast facility.

Category	Type of venue / broadcast coverage	Notes
Tv1	Venues hosting top level international hockey with matches scheduled in the hours of darkness. Broadcasters to use HDTV / 4K TV cameras in the main camera and orthogonal field camera positions.	This criteria specified in this category has been established to provide suitable sports lighting for top quality broadcasting of hockey during the hours of darkness. As venues become available it will be introduced into FIH Venue Specifications for top level competitions and the FIH recommend that new lighting systems for venues wishing to host such events adopt this category.
Tv2	Venues hosting televised hockey that will take place during the hours of darkness. Broadcast to use cameras principally positioned in the main camera position.	The quality and uniformity of lighting, as seen by any cameras located on the ends and opposite the main camera position may, not be as good as that produced by Category Tv1 Venues considering lighting to this category should ensure it is compliant with venue specifications and the needs of host broadcasters.
Tv3	Venues wishing to: <ul style="list-style-type: none"> • Host broadcast hockey events with daytime play, the lighting being used to enhance any dull natural light conditions. • Host events during the hours of darkness, with on-line streaming, 	Lighting to this category should also be adequate for the high-performance video analysis of matches and training during the hours of darkness. Specific broadcast rules may require venues hosting daytime matches to have a lighting system suitable for night time play, to ensure certainty of scheduling irrespective of weather conditions.

Selecting the most appropriate lighting systems

The light emitting diode is the most efficient lighting technologies present today. LEDs use heat sinks to absorb the heat produced and dissipate it into surrounding environment. This keeps the LEDs from overheating and burning out. Thermal management is generally the single most important factor in the successful performance of an LED light over its lifetime. The higher the temperature at which the LEDs are operating, the more quickly the light will degrade and the shorter their useful life will be.

Suitable lighting for broadcast quality hockey may be achieved by either mounting luminaires on the roof-tops of the stadium or by mounting the luminaires on masts along either side of the field.

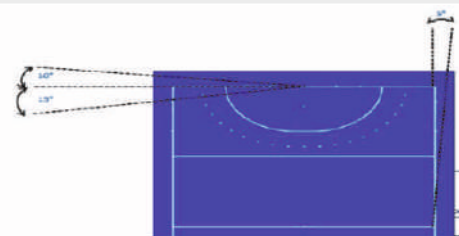
If luminaires are mast mounted, the

masts must always be situated outside the perimeter margin of the field and to provide a glare free environment for players officials and media the column should not be placed within an area of

- 10 degrees beyond the end lines from centre of the goal.
- 15 degrees before the end line from centre of the goal.
- 5 degrees beyond side lines from the centre line.

Side mast arrangements usually provide a more uniform lighting result and may be economically feasible as pole height requirements are typically reduced. Four, six or eight masts are usually acceptable.

Corner Mast Arrangement - A corner mast system can be utilized but care should be taken that masts are situated so that there is sufficient vertical illuminance as this can sometimes prove



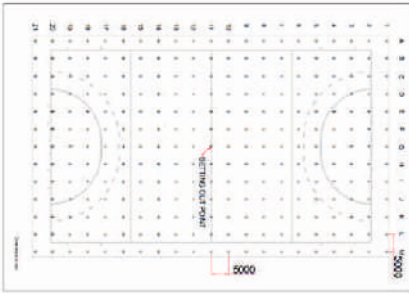
difficult in the central area of side-lines.

Obtrusive Light

This is the light that is directed up into the sky or beyond the boundary of a sporting facility. Reference should be made to CIE 150 or local regulations.

Commissioning

The luminaires must be aimed according to the lighting design and this should be followed by measurements to ensure that the installation meets the requirements of this guide. Measurements should be carried out using a calibrated illuminance meter.



- Before measuring the supply, voltage should be checked.
- A measurement record sheet should be used to record the results as prescribed
- For testing a grid of maximum size 5m x 5m should be laid out with a

point in the centre of the field covering the FOP and perimeters margins.

Test Conditions - The tests should only be made in darkness and when weather conditions will not impede measurements (not in rain, mist, fog and snow)

FIH Standards for broadcast quality

				Tv1	Tv2	Tv3
Maintained average illuminance (luc)	Vertical illuminance - main camera		Ev _{mc}	≥1650	≥1400	≥750
	Vertical illuminance - orthogonal field cameras	Dir. A	Ev _{od}	≥1200		
		Dir. B				
		Dir. C				
Horizontal illuminance		Eh	≥2000	≥1650	≥1000	
Illuminance uniformities	Vertical illuminance-main camera	Ev _{min} / Ev _{max}	Uh1	≥0.60	≥0.60	≥0.35
		Ev _{min} / Ev _{max}	Uh2	≥0.65	≥0.65	≥0.45
	Vertical illuminance - orthogonal field cameras	Ev _{min} / Ev _{max}	Uh1	≥0.50		
		Ev _{min} / Ev _{max}	Uh2	≥0.60		
	Horizontal illuminance	Ev _{min} / Ev _{max}	Uh1	≥0.65	≥0.65	≥0.65
		Ev _{min} / Ev _{max}	Uh2	≥0.70	≥0.70	≥0.70
	Minimum adjacent uniformity ratio	MAUR	Vertical	≥0.65	≥0.6	
			Horizontal	≥0.65	≥0.6	≥0.60
Flicker Factor				≤5%	≤15%	≤30%
GR-Max				<50	<50	<50C
CRI				>75	>65	>65
Colour temperature (K)				>5000 <6200	>4000 <6200	>4000 <6200

Additional requirements for category Tv1

- The maximum vertical illuminance shall be within the SMRZ
- The minimum vertical illuminance of the FOP shall not be within a SMRZ
- Both SMRZ shall have the same quality of lighting
- The maintained average vertical illuminance in Direction A shall be greater than the average vertical illuminance in directions B, C, or D
- As far as reasonably practicable the vertical illuminance in each orthogonal direction of Tv2 should comply with the requirements of lighting category Tv1

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Views expressed in this article are those of the contributors and do not necessarily reflect those of the editors or publishers

Reference – FIH guidelines 2018

Signify illuminates 25 border villages in Arunachal with the Indian Army



Signify has illuminated 25 villages in the Tawang District of Arunachal Pradesh, with energy-efficient LED street lighting to enhance the safety of local citizens. The project was executed in partnership with the Indian Army and grassroot NGO, BharatCares, as part of the company's 'Har Gaon Roshan' CSR program, which

focuses on sustainable rural development and women's safety across India, through lighting.

This project aims to create a positive impact on the quality of life across over 1,500 households within these villages by illuminating the streets and community centres such as primary healthcare buildings, places of worship,

and other public places. Despite the availability of grid electricity, there is minimal provision of street lighting in rural border villages.

Through this project, Signify aims to improve the safety and security of

7,500+ local citizens while creating awareness among the masses around the benefits of sustainable lighting solutions.

Commenting on this collaboration, Nikhil Gupta, Head of Marketing, Strategy, Govt. Affairs & CSR - Signify, Greater India said, "We are elated to be working with the Indian Army in creating a lasting impact for rural villages along the Indian border. The Indian Army plays a crucial role in aiding civil authorities and infrastructure to provide a safe and equitable environment for the citizens of our country. Alongside our NGO partner BharatCares, these street lighting solutions will improve safety and security, especially during the night, support educational activities by providing well-lit spaces for studying, and facilitate local businesses by extending their operational hours. By bringing reliable and sustainable lighting to the people of Tawang, including Lumpo which is one of the last villages close to the LAC, we aim to empower the community and contribute to its overall development and prosperity."

By installing a variety of high efficiency LED street lighting products totalling to around 350 individual fixtures, Signify hopes to create a long-lasting and sustainable solution that will improve the quality of life in these border villages. This project is set to leverage technology and innovation for isolated communities by providing essential services such as lighting solutions to brighten the path to a brighter future.

AUTHOR: SIGNIFY INNOVATIONS INDIA LIMITED

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Bajaj Electricals distributes Cookstoves in Rural Rajasthan

The CSR arm of Bajaj Electricals, the Bajaj Electricals Foundation, recently carried out the "Swasth Ghar Improved Cookstove" project that perfectly embodies its renewed focus on the principle of "Better Planet, Better Life" that underscores a dual focus: enhancing the quality of life for communities while safeguarding the environment.

The Swasth Ghar project is a compelling example of how corporate entities can effectively integrate sustainability into their core CSR strategies. Launched in the Karauli district of Rajasthan, this initiative targets a pressing issue faced by many rural communities: indoor air

pollution caused by traditional biomass stoves. These conventional cooking methods contribute significantly to environmental degradation and pose serious health risks, including respiratory problems and other ailments.

At the heart of the Swasth Ghar initiative is the distribution of 4,000 improved cookstoves to over 20,000 individuals in rural Rajasthan. These state-of-the-art cookstoves are designed to burn fuel more efficiently, which not only conserves approximately 40-50% of firewood per household but also produces minimal smoke. This advancement directly addresses the environmental impact of deforestation

role in mitigating climate change and its associated impacts. Furthermore, the efficient use of firewood translates into less pressure on local forests, helping to preserve biodiversity and maintain ecological balance.

The success of the Swasth Ghar project is not solely attributed to the technology itself but also to the strategic collaboration with a Climate & Sustainability consultant. This partnership ensures that the project is both practical and scalable, reinforcing Bajaj Electricals' commitment to effective and impactful CSR activities.



and greenhouse gas emissions, while also improving indoor air quality and reducing health hazards.

The project's environmental benefits are substantial. By promoting the use of cleaner cooking technology, the Swasth Ghar initiative is projected to reduce around 60,000 tonnes of CO2 equivalent emissions. This reduction plays a critical

"At Bajaj Electricals Foundation, we believe that a commitment to sustainability is a commitment to the future. Our CSR



initiatives are driven by the vision of creating a 'Better Planet, Better Life,' where each project we undertake not only addresses the immediate needs of today but also paves the way for a more sustainable and equitable tomorrow. Together, we strive to make a lasting impact that enriches both our environment and our communities.

Our on-ground projects are where our vision truly comes to life. Each initiative is designed with a deep understanding of the local context and a commitment to making tangible, positive changes. We are dedicated to working hand-in-hand with communities, ensuring that our efforts not only address immediate needs but also empower people to build a better future for themselves. Through these grassroots projects, we aim to create lasting impact and drive meaningful progress in the areas we serve."

Pooja Bajaj – Executive Director (CSR), Bajaj Electricals Limited

AUTHOR: BAJAJ ELECTRICALS

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Market Surveillance of LED lights covered under Compulsory Registration Order (CRO)

Ministry of Electronics & IT through a circular dated 5th July 2024 has notified the market Surveillance of LED lights covered under the Compulsory Registration Order (CRO). The Software Technology Parks of India (STPI) has been entrusted with the task of supporting the Ministry in executing activities pertaining to Surveillance.

The cost of surveillance shall be borne by the manufacturer/licensee. The sample selection for the surveillance shall be done using random sampling mechanism. The samples would be purchased from the open market and submitted to designated BIS-recognized laboratories for testing by STPI. The detailed instructions regarding execution

of surveillance would be issued to the registered manufacturers and their authorized representatives, designated BIS recognized test labs at the time of issuance of Surveillance Orders to licensees/manufacturers/labs for selected Registration Numbers.

All the registered manufacturers are requested to cooperate to complete the surveillance activities (e.g. updating their contact details, timely providing information, documents payments of demand, etc.) in a time-bound manner to avoid penal actions as per the provisions of BIS Act, 2016.

The details of nodal officer for Surveillance is as under:

Dr. Bharat Kumar Yadav Scientist 'E'

Email: b.yadav@meity.gov.in

Tel: 011-24301353

ELCOMA has requested MEITY to ensure that this surveillance process needs to be conducted effectively by drawing samples from all registered manufacturers and without restricting this exercise to within major brands. This will help to curb to some extent the present menace in the market due to the presence of products from the unorganized brands which are being sold.

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Window for PLI Scheme 3.0 for White Goods (AC and LED Lights) Reopened

The Ministry of Commerce and Industry have announced the reopening of the application window for PLI Scheme for White Goods (ACs and LED Lights) for 90 days from 15th July, 2024 to 12th October 2024. With the reopening of the application window, the Government has given another chance to prospective investors to benefit from the scheme.

The interest and appetite of the Industry in this scheme so far prompted the Government to reopen the application window. This is an outcome of the growing market and confidence generated due to manufacturing of key components of ACs and LED lights under the PLI Scheme. This is a welcome move as it has been the endeavor of ELCOMA to support any move to create an ecosystem to increase the manufacturing base of electronic components.

The PLI Scheme application window is being opened on the same terms and conditions stipulated in the PLI Scheme notified on 16th April 2021 and its guidelines issued on 4.6.2021 and its subsequent amendments from time to time. The application window for the Scheme shall remain open for the period from 15th July 2024 to 12th October

2024 on the same portal. No application shall be accepted after the closure of the application window.

Further, in order to avoid discrimination, both new applicants as well as existing beneficiaries of the scheme who propose to invest more by way of switching over to higher target segment of their group companies applying under different target segment would be eligible to apply subject to fulfilling the eligibility criteria conditions as mentioned in the para 5.6 of the scheme guidelines and adhering to the corresponding investment schedule of the scheme guidelines.

Consolidated Scheme Guidelines are available at <https://plwhitegoods.ifcilttd.com/> and at https://dpiit.gov.in/sites/default/files/Consolidated_Guidelines_PLIScheme_23October2023.pdf

In terms of Para 6.4 of the PLI White Goods Scheme and Para 9.2 of the Scheme Guidelines, applicants shall only be eligible for incentives for the remainder of the Scheme's tenure. The applicants approved in the proposed 3rd round would be eligible for the PLI for maximum three years only in the case of new applicants and existing beneficiaries opting for investment

period upto March 2023 seeking to move to higher investment category. For existing beneficiaries opting for investment period upto March 2022 seeking to move to higher investment category in the proposed third round would be eligible for PLI for maximum two years only. Existing beneficiaries opting for the above, in case they are not able to achieve the threshold investment or sales in a given year will be eligible for submitting the claims as per their original investment plan. However, this flexibility will be provided only once during the scheme period.

Further to maintain liquidity in the business, better working capital management, and enhance operational efficiency of beneficiaries, the Government has decided to introduce the system of Quarterly claims processing of PLI in place of processing of claims on annual basis. Necessary amendments are incorporated in the scheme guidelines to clarify the above.

The Union Cabinet had given approval for the PLI Scheme for White Goods for manufacture of components and sub-assemblies of ACs and LED Lights on 7.4.2021 in pursuance of the clarion call by the Prime Minister for Atmanirbhar Bharat to bring manufacturing at the center stage and emphasize its significance in driving India's growth and creating employment. The Scheme shall be implemented over a seven-year period from FY 2021-22 to FY 2028-29 with an outlay of Rs. 6238 crores.

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Eveready wins Prestigious Brands of India Award

Goal Fest Conclave is a platform to bring together various visionaries, thought leaders, heads of state, policymakers, academicians and corporate heads who play a pivotal role in shaping industries with their inspiring contributions.

The Goalfest Conclave 2024 was held on 20th August at ITC Maratha, Mumbai, India. The event commenced with a recognition ceremony led by Mr. Saimik Sen, the Editor-In-Chief of Herald Global, setting a high-spirited tone. The conclave garnered attention due to the presence of notable individuals such as Shri Arvind Sawant - Member of Parliament for Mumbai South and Chief Spokesperson of Shiv Sena (Uddhav Balasaheb Thackeray), Dr. Vijay Kalantri - President of the All India Association of Industries, Dr. Sanjay Mukherjee- Metropolitan MMRDA Commissioner, Mr. Lalit Gandhi - President of MACCIA (Maharashtra Chamber of Commerce, Industry & Agriculture), and Mr. Nitin Thakker - President of the Bombay Bar



Association who were honoured with the Pride of India Awards.

Goal Fest Conclave 2024 included the unveiling of Prestigious Brands of India Awards 2024, a listing of remarkable brands who have redefined the benchmarks in their respective fields through their legacy and sustainability in the market. The winners were selected

after a rigorous three phases of research conducted by BARC Asia research team which included secondary research, primary survey and the rating given by independent jury members. Eveready Lighting has been honoured as one of the Prestigious Brands of India at the Goalfest Conclave in the category under Lighting solutions.

The Goal Fest Conclave also had a unique category, known as the “Marketing Meisters”. This category was specially curated to felicitate various dignitaries who have successfully led their brands to reach unwavering heights. The awardees included Mr. Mohit Sharma, Senior Vice President and BU Head – Lighting and Electrical Accessories from Eveready Industries India Ltd. who was felicitated with the title of Marketing Meister of the year 2024-2025.



AUTHOR: EVEREADY INDUSTRIES INDIA LTD.

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Bajaj Launches LEDZ Inverter Series

Bajaj Electricals recently launched their LEDZ Inverter Series which ensures that customers are never left in the dark. Designed specifically to tackle the unpredictability of India's power supply, this diverse line of inverter lighting includes options for every need—be it lamp, batten, or panel.

The LEDZ Eterno Inverter Lamp 9W boasts a unique built-in battery charge indicator allowing users to know its charging status saving significant amounts of energy as compared to conventional charging. It also comes with multiple modes of operations. With a backup of 300 lumens and up to 4 hours of lighting on a full charge, it's a reliable choice for essential lighting

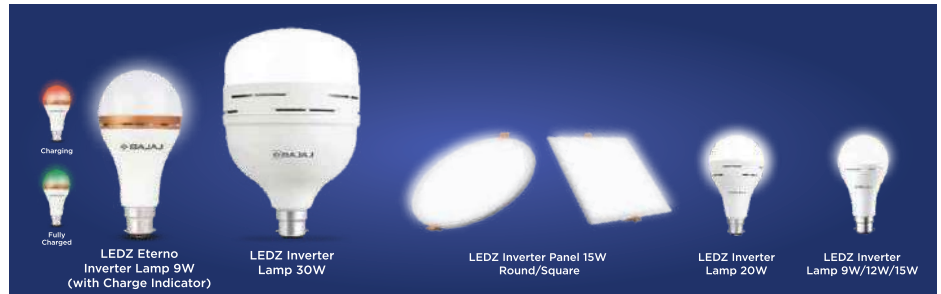
during outages.

For a broader range of needs, the LEDZ Inverter Lamps come in various wattages from 9W to 30W, offering up to 600 lumens of backup light and 4 hours of operation on a full charge. Their auto cut-off feature ensures efficient energy use.

For versatile lighting options, the LEDZ Inverter Batten provides a backup of 450

lumens for up to 3 hours with a full charge, available in 10W and 20W options and the LEDZ Inverter Panel (Round/Square) offers a sleek design with 500 lumens of backup light and 3 hours of illumination in a 15W variant.

With Bajaj's LEDZ Inverter Series, you can stay prepared and keep your space bright, no matter when the power goes out.



Signify brings in High-bay & Low-bay solutions for a greener future

Signify recently launched their GreenPerform EliteX and DuraLED Elite products.

The GreenPerform EliteX is a Highbay solution designed to deliver excellent energy efficiency and superior optics for a wide range of applications like warehousing, manufacturing, industrial applications, atriums, airport concourses, sports halls amongst others.

This highbay delivers system efficacy of 180 lm/W that maximizes energy-saving and has a rated life of 100K hours thus lowering operating costs. The EliteX also provides superior light quality, exceptional brightness, color rendering and flicker-free operation for a visually comfortable and productive work environment. The flicker free lighting minimizes eye strain leading to increased efficiency and output. Potted drivers with inbuilt a surge rating of 6kV, wide operating voltage range of 140-270V and high low cut off makes it

a highly reliable and low maintenance product.

The DuraLED Elite Well Glass is designed to excel in the toughest industrial environments. DuraLED Elite provides low bay lighting for a wide range of Industrial applications like Boiler Areas, Closed conveyor belts, utility areas, maintenance platforms, rolling mills etc.

The DuraLED Elite provides 150lm/w

system efficacy, efficiently delivered through a combination of well-engineered LED light engine and HE electronics drivers. It has a robust mechanical construction with IP65 ingress protection, impact resistance of IK07 coupled with superior electronics and inbuilt safety provisions (CM/DM surge 4KV) along with optimal thermal design delivered through better airflow management and heat-sink design.



Halonix launches Wall De-Light - Spiritual Series LED Lights

In a tribute to India's rich spiritual heritage, Halonix Technologies launched 'Wall De-Light' - Spiritual Series' LED lights. This innovative series, deeply rooted in spiritual symbolism, celebrates the historical and cultural significance and sentiments of the 'Ram Mandir' project.

The Spiritual Series lights feature the inscription of Lord Ram's name, the sacred image of Lord Ganesh and the Om symbol, bridging the gap between traditional spirituality and modern aesthetics. The series offers two contemporary designs - Round and Square, both in 12W LED with a 2-year warranty. Built on Halonix's revolutionary Unifit Technology platform that allows these slim lights to be mounted on the wall, the sacred



images are easily visible to all. The innovative features, design and functionality make it a reliable, cost-effective lighting solution for illuminating spaces and bringing a spiritual essence to the room.

Enthusiastic about the launch of the new product, Rakesh Zutshi, Managing Director, Halonix Technologies, said, "We have brought together a new dimension to wall lighting with a

product that celebrates faith and pays homage to our cultural roots. Considering the Indian sentiments, our Spiritual Series is not just lighting spaces; it's lighting up the essence of India's timeless heritage and shared beliefs. This is a testament to our unwavering perseverance and dedicated R&D and design teams creating unmatched products tailored to meet the demands of the Indian market."

Tisva's New Range of Decorative Lighting – Adamas and Arbor Launched

Tisva recently introduced a fresh collection of decorative lighting – Adamas and Arbor where each piece is distinguished by its unique design narrative that offers lighting solutions for every type of home.

The Adamas Chandelier, inspired by the classic charm of diamonds has an indestructible and exceptional sparkle. Styled with a golden electroplated iron base, its K9 crystals in shades of smoky black and white create unique and dynamic patterns.

The Adamas Wall Light is a 10W LED filament lamp comprised of smoky black and white crystals that weave an opulent tapestry of light play throughout the room. Its K9 crystals refract and

disperse light in a way that is designed to enhance and accentuate any space.

Inspired by an Arbor, this pendant exudes a similar natural charm. The acrylic shade of the pendant works like a natural filter by radiating a soft and inviting glow that brings out the inherent beauty of the sunlight through vines. Designed with a brass-coloured mounting plate with the base rounded off with an acrylic-coloured aluminium cup, this pendant also has a dimmable feature that allows you to personalize your ambiance from day to night.

The Arbor pendant is available in single, three, and five-head variations. In the single head users can choose from the red, grey, and black colour cups. The three-head version has red, black, and

grey heads, and the five-head one has red, grey, black, white, and blue. These pendants are highly versatile and allow for adjustable height.



Orient Launches Prism COB Range

As Accent lighting has become a vital part of modern interior design, COBs are gaining traction in the market offering a blend of efficiency, versatility, and aesthetic appeal. Whether for residential, commercial, or outdoor use, COB lights highlight your space with the focused beams of COB lights. Ideal for accentuating artwork, architectural details, unique décor pieces and key areas, these lights provide customisable illumination with various beam angles. Their compact design merges efficiency with a contemporary look, enhancing both style and function.

Orient has launched a wide range of Recessed and Surface COBs in different reflector colors, beam angles and in all CCTs serving all the consumer needs

Prism Twist: With its adjustable light angle (upto 30°) this Prism Downlighter makes it perfect for highlighting any space where directional lighting of upto 24° is required. Available in 6W/12W/18W with black reflector and black aluminium housing makes it suitable for contemporary homes.

Prism Classic: With its white

Aluminium body and black reflector this downlighter is a perfect choice to be used in bedrooms and dining areas to elevate the ambience with its 24° beam angle and is available in 5W/10W/15W

Prism Cosmic DL: With its advanced optics (beam angle 24°) and rimless design they are ideal for modern offices and homes. Comes in 6W/12W/18W in all 3 CCTs and black finish reflector.

Prism Recess COB: With its gold reflector and different wattages (6W/12W/18W) this COB is ideal choice to adorn your living spaces with beam angle of 36°.

Prism Rainbow COB : With dual colour feature, this downlighter brings dynamic playful lighting effects in kids room, creative spaces etc. Comes in different colour combination like White+Blue, Warm White+Blue, Natural White+Blue that can be changed with the

help of switch.

Prism 3 CCT DL: This deep COB downlighter provides 3-in-1 lighting with adjustable colour temperatures - cool white, neutral white and warm white. Ideal for bedrooms, lounges, and conference rooms, it creates a customised ambience for any mood or activity. Available in 5W and 12W.

With its wide range of options, consumers can choose the COB that best suits their preferences, whether they prioritize brightness, energy efficiency, or design. This flexibility allows for tailored solutions that meet diverse needs across various applications.



INDUSTRY **NEWS**

Ananda Chatterjee joins HPL Group



Mr. Ananda Shankar Chatterjee recently joined as Vice President- Sales & Marketing in Consumer LED lighting and Domestic Cable Division of HPL group. A Graduate from Delhi University with an Executive- MBA from National Institute of Management, Ananda has experience of over 27 years of in Sales & Distribution, including deep understanding of B2B, B2C & Alternate Channel Sales.

Prior of joining HPL, Ananda was with Eveready Industries India Ltd. and has had long and multi-faceted experience in Sales & Marketing in various lighting brands like Opplé Lighting, Orient Electrical, Osram India and Philips India Ltd

ELCOMA wishes him a very long and meaningful association with the HPL Group.

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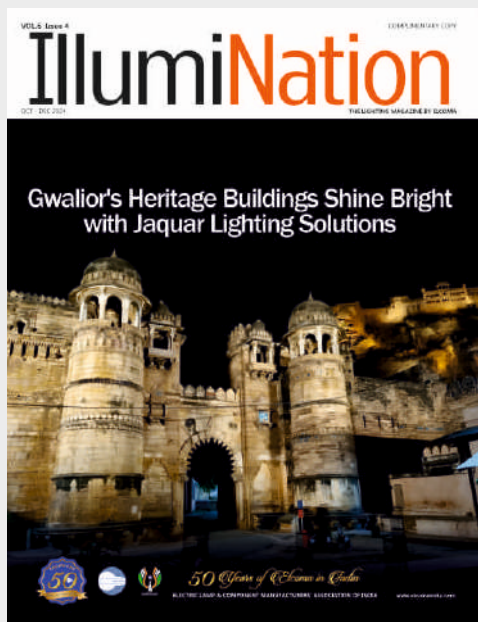
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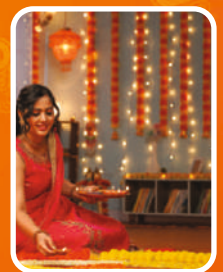
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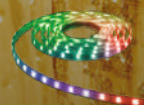
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