

# IllumiNation

OCT - DEC 2022

THE LIGHTING MAGAZINE BY ELCOMA

## Thiruvananthapuram International Airport transformed with Havells Illumination



*50 Years of Elcoma in India*

ELECTRIC LAMP & COMPONENT MANUFACTURERS' ASSOCIATION OF INDIA

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



# Illuminating Landmarks



Ripon Building, Chennai

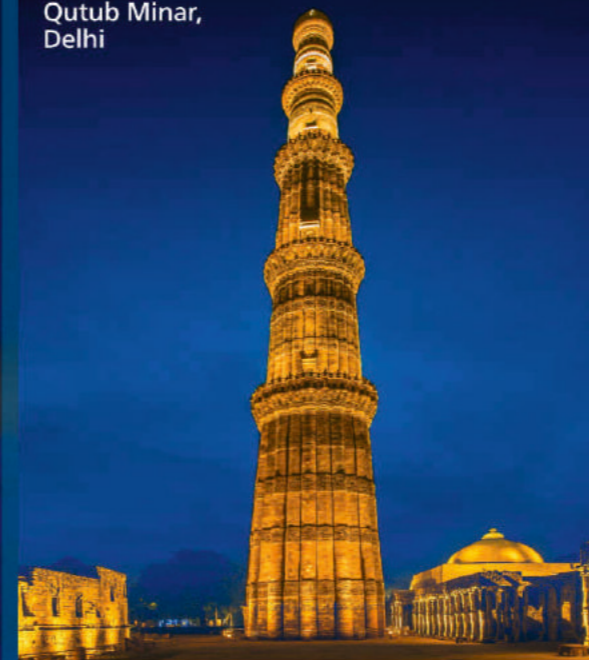
It is our honor to illuminate Chennai's iconic landmark – The Ripon Building and showcase its rich heritage and grandeur, using our Philips dynamic lighting portfolio. While we are trusted to light up the world's most iconic structures, we also light up infinite possibilities across cities, homes and businesses every day.

innovation ✦ you



ReachElite - Long-throw floodlight

Qutub Minar, Delhi



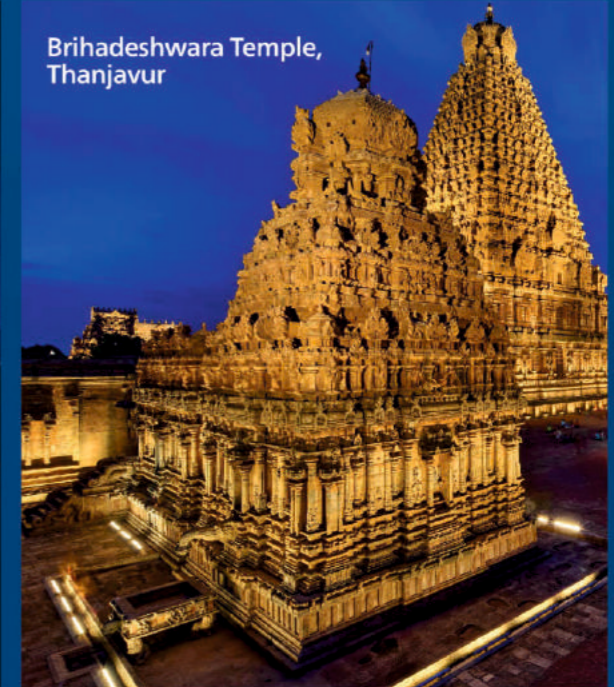
Kusum Sarovar, Mathura



Rashtrapati Bhavan, New Delhi



Brihadeshwara Temple, Thanjavur



For queries:

Toll free number: 000800 0507777 (Monday to Saturday 09:00 - 18:00)

Email: [support.india@signify.com](mailto:support.india@signify.com) | To know more: [lighting.philips.co.in/prof](http://lighting.philips.co.in/prof)



# PAMPER YOUR EYES WITH COMFORT



EYE CARE



## LAUNCHING BAJAJ EYE CARE RANGE

AVAILABLE IN LAMP 9W & BATTEN 20W



LOW FLICKER\* (<5%),  
Less Eye Strain &  
Reduces Headaches



CCT 5000K\*,  
Horizontal  
Day Light



WIDE COLOUR  
SPECTRUM\*,  
Less Visual Fatigue

\*RESULTS AS PER 3<sup>RD</sup> PARTY TEST LAB TESTING.





**HAVELLS**



# GLAMOUR COMES HOME

Havells brings you the stylish range of Glamtubes. Switched on or off, they are always glamorous.

## Glamtubes

### Glamorous range of the Glamtubes



**STELLA**  
Inspired by the galaxy



**ATRIA**  
Inspired by constellations



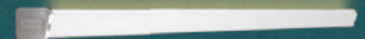
**AURORA**  
Inspired by the Northern Lights



**SUPERNOVA**  
Inspired by a cluster of stars



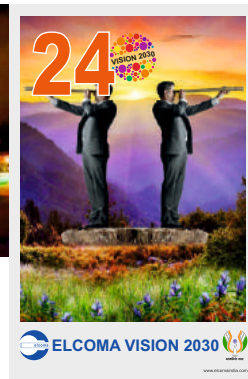
**VANESSA**  
Inspired by Cosmic Rays



**NICOLAUS**  
Inspired by the 'day-night phase'



## CONTENTS



### CAPTAIN SPEAKS

- 10** Building a Brighter Tomorrow - Mr. Mohit Sharma, SBU Head and Sr. Vice President at Eveready Industries

### CHAT TIME

- 14** Smart Lighting Applications are Unlimited - Mr. Puneet Dhawan, Executive Vice President of Orient Electric (Lighting Switchgear and wiring Accessories BU)



### COVER STORY

- 18** Havells Transforms Thiruvananthapuram Airport with Dynamic Lighting System



### SPECIAL FEATURE - *50 Years of Elcoma in India*

- 16** Shyam Sujan wins First Global ISA IDOC Award
- 22** Luker Illuminates Statue of Unity
- 24** ELCOMA Vision 2030
- 26** ELCOMA 52nd AGM at Delhi
- 36** Signify partners with Samarthanam Trust to set up 10 computer labs for visually impaired students across India
- 37** Government notifies Battery Waste Management Rules, 2022

### TECH CORNER

- 28** Design Lighting for Hockey Stadiums for International and National Events
- 32** Crossing the Chasm
- 40** Lighting Pollution and Glare in Office Spaces

### INDUSTRY NEWS

- 43** Appointment of New Members
- 44** 30 BIS Raids against Non-Compliant Products this year

### PRODUCT SHOWCASE

- 42** Signify expands 3D-printed lighting range in India
- 43** Orient Launches Joylite series of Festive Lights





# IllumiNation

VOL.4 Issue 4, OCT - DEC 2022

**PUBLISHER**

Shyam Sujan  
Electric Lamp and Component Manufacturers' Association of India  
122, 1st Floor, DLF Tower-A, Jasola District Centre, Jasola Vihar, New Delhi - 110025  
Tel: +91-11-41556644/46604947

**EDITOR**

Shyam Sujan,  
Secretary General, ELCOMA

**EDITORIAL BOARD**

Sudeshna Mukhopadhyay  
Amal Sengupta  
Krishan Sujan  
Natasha Tandon  
Jayaganesan K  
Pruthwiraj Lenka  
Vidyashankar Krishna

**EDITORIAL CONTACT**

info@elcomaindia.com

**MARKETING AND ADVERTISEMENT CONTACT**

Amal Sengupta  
amalsengupta@elcomaindia.com

Printed & Published by Shyam Sujan on behalf of Electric Lamp and Component Manufacturers' Association of India, 122, 1st Floor, DLF Tower-A, Jasola District Centre, Jasola Vihar, New Delhi - 110025, Tel: +91-11-41556644/46604947

The opinions expressed by authors and contributors to IllumiNation are not necessarily those of the editor, editorial board or publisher. All trademarks and trade names mentioned in this magazine belong to their respective owners.

IllumiNation may not be reproduced in whole or in part without prior permission of the publisher. The claims and statements made in the advertisements in IllumiNation are those of the advertisers and are in no way endorsed or verified by IllumiNation, its editor, its editorial board or ELCOMA.

The publisher has made every effort to ensure the accuracy of information contained in this publication, but cannot assume liability for the errors.

Copyright© 2022. All rights reserved throughout the world. Reproduction in any manner prohibited. ELCOMA does not take responsibility for returning unsolicited material/s.

**ADVISORY BOARD**



**Avinder Singh**  
President, ELCOMA



**Anuj Poddar**  
Vice President, ELCOMA



**Nirupam Sahay**  
Treasurer, ELCOMA



**Sunil Sikka**  
Advisor, ELCOMA

**EDITORIAL BOARD**



**Krishan Sujan**



**Sudeshna Mukhopadhyay**



**Natasha Tandon**



**Vidyashankar Krishna**



**Jayaganesan K**



**Pruthwiraj Lenka**



**Amal Sengupta**







# The Future is Bright

The progress of ELCOMA's Vision 2024 is astounding and we are well on the way to achieving the objectives set forth in this program as per plan. Towards promoting electronic component self-reliance, we have already identified various component manufacturers who are either setting up new manufacturing facilities or scaling up their existing facilities to support the industry with most of the components that were being imported so far. With the perspective of promotion of exports to global lighting markets from India, a beginning has already been made and ELCOMA has invited about ten global delegates from various countries who head the local Lighting Industry Associations in their respective countries. Besides participating in panel discussions on new lighting technologies at the upcoming conference during Light+ LED expo at Delhi, in first week of November 2022 these delegates will also interact with ELCOMA members to discuss business opportunities in their respective countries.

In line with the successes of the Vision 2020 and Vision 2024 programs that have paved the way for the progress of Indian Lighting Industry, ELCOMA is now preparing a Vision 2030 document that will outline the next steps for growth for the industry in the coming years. We are introducing some of the basic objectives of this Vision 2030 in this issue of Illumination. We hope that this program will herald a new direction for the industry and leverage the various growth drivers to enable double digit growth for several years to come.

From our past experience, it is clear that the industry recognizes our vision and objectives which are directed towards growth, potential and innovation. They are enthusiastic about getting on board and extend their full support in executing all the directives outlined in these vision documents. I would like to personally thank all the ELCOMA members for their support and look forward to their continued encouragement and backing for all such endeavours proposed by ELCOMA.

As always, this issue of magazine also carries interesting articles on emerging technologies and future plans for the Lighting Industry. The reach of Illumination is ever increasing and we are proud to see a steady rise in the readership of this magazine. I look forward to comments from readers about the articles, suggestions and inputs required to make this magazine better.

Wishing all our readers the best for the festive season.

A handwritten signature in black ink that reads "Shyam Sujan".

**SHYAM SUJAN**

Secretary General

Electric Lamp and Component Manufacturers Association of India (ELCOMA)





# INTRODUCING SMART+ RANGE FROM LEDVANCE



COLOR  
TUNABILITY



BRIGHTNESS  
CONTROL



TIMER AND  
SCHEDULING



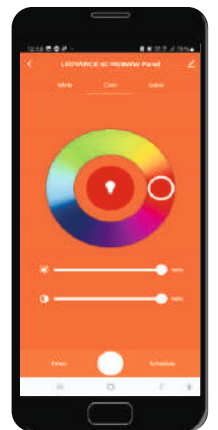
VOICE  
CONTROL



APP  
CONTROL



16 MILLION  
COLORS



TO DOWNLOAD  
LEDVANCE SMART+  
WIFI APP SCAN  
THE QR CODE



## LEDVANCE PRIVATE LIMITED

1201-1202, 12<sup>th</sup> Floor, Signature Tower, Tower-A, South City-1, Gurugram-122001, Haryana (India)  
Customer Care: +91-124-4150100 • [customercare@ledvance.com](mailto:customercare@ledvance.com) • [www.ledvance.com](http://www.ledvance.com)



@ledvindia



@ledvindia





# Festival bonanza amidst global uncertainties

**D**iwali has always been a prosperous time for the Indian lighting Industry. This year, after a gap of nearly 2 years, it is going to be celebrated with a lot of fervour and grandeur.

We have had tumultuous times in the last couple of years due to unprecedented pandemic conditions. Fortunately, they are improving in India. However, we are still plagued by high inflation, rising federal bank rates, geo-political uncertainties, and consequently high input costs and supply chain disruptions. All these factors conflict with growth and development, but I am confident that our government's focused attention to addressing the controllable aspects coupled with the festivities that are around the corner, would bring back cheers to the consumers and the businesses. I expect the coming months to be conducive for our lighting business helping it to grow.

Not only I, but the experts also believe that the Indian economy is an outstanding performer amongst the very large emerging economies. At this point, we have the highest potential growth and are one of the most attractive investment destinations. We are not solely dependent on any one growth engine which is fading in its might – and our strengths are precisely in those areas which are advancing in economic power. Semiconductor manufacturing, National logistics policy, and 5G technology are the perfect examples of creating a future-looking eco-system.

I would also like to touch upon the lighting industry's vision. Our vision 2020 and 2024 objectives have been largely successful and are on track. They were well received by the government and fittingly implemented by our ELCOMA members.

We are now working on the Vision 2030 plan. Some of its key directional themes are localisation, competitive price, superior quality, innovative and technologically advanced products, and smart- connected- digitized solutions. A blueprint of the Vision 2030 plan is outlined in this issue. I am sure, together, we will achieve the set objectives.

I am also delighted to inform you that ELCOMA is organizing a conference on Digital LEDs and upcoming technologies on the 4th of November 2022 at India Habitat Centre, New Delhi. Idea is to promote awareness about the new technologies and their impact on the transformation of Lighting. Beyond presentations and panel discussions, the conference shall be attended by several international speakers whom we have specially invited for this August event, to talk about the advanced lighting technologies around the world. Please, enthusiastically participate and join the conference.

Last but not the least, I would like to thank all the members for electing me the President of ELCOMA. I feel privileged and honoured for the trust you have bestowed on me. I would do everything that it takes to live up to your expectations and would enthusiastically work to take our Lighting Industry to the next levels of innovation and growth. You are welcome to write to me for any issues or required support. I will do my best to address your concerns.

Once again, on behalf of all of us at ELCOMA, I thank you for the commitment that the members have shown in executing the set objectives, especially during these challenging times. Let us continue to be vigilant and agile. I am sure that together we can tide over difficult times and embark on the path of growth and prosperity.

I would also like to take this opportunity to wish the readers of "IllumiNation" and ELCOMA members a joyous Diwali and a prosperous new year!

With best wishes

**AVINDER SINGH**  
President, ELCOMA





Brightness that lasts on and on | illuminating every corner of your life.



**When it comes to LED lighting technology, there is no better alternative than HPL. The most elegant range of LEDs: low on power consumption, low on maintenance and with customer satisfaction.**

**FEATURES:**

SMD LED's for good quality illumination and longer life. | Constant current drivers. Highly efficient metal core PCB. Superior quality diffuser for glare free distribution. Extruded aluminium heat sinks with specially designed fins.

**OTHER LIGHTING PRODUCTS**



**LED Bulbs & Tubes**



**Inverter Lamp**



**COB**



**LED Lumino**



**LED Highbay**



**LED Street Light**



long life



ECO light solution



maintenance free



compact & sleek design



LOW HEAT generation



energy saver

**HPL Electric & Power Ltd**  
hpl@hplindia.com | Ph.: +91-120-4656300  
Customer Care No. 1800 419 0198

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



# Building a Brighter Tomorrow

IllumiNation in conversation with Mohit Sharma, SBU Head and Sr. Vice President at Eveready Industries on the company's plans for the future

### **Please tell us about your professional journey so far.**

I started my career in Philips India Lighting Division from front line and left the company as Regional Marketing Head-North. I worked in North and East part of India in different roles at Philips.

After Philips I worked for 2 years for Havells India Ltd. heading their Lamps SBU and was the youngest Business head at Havells. I have taken care of both the bottom line and top line of the business and initiated launch of LED lamp operations in India. Initiation of Rural marketing operations was also an added feather in the cap during my tenure there.

I then moved to HPL and headed the Lighting division there, initiated Luminaire and LED business and set up production processes and streamlined the overall operations. I helped grow HPL lighting business turnover from 70 Cr to 350 Cr in 5 years and as a result HPL became among top 8 LED companies in India.

I worked with Jaquar as SBU Head for more than 5 years, heading overall operations and was leading all verticals – Sales, Marketing, Manufacturing, Supply Chain, Strategic Consulting and sales strategy development. I kickstarted many initiatives for strengthening lighting operations – B2B, B2C, Overseas operations and also initiated setting up the state-of-the-art manufacturing facility.

I am currently heading Lighting business for both Consumer Lighting and Professional Lighting at Eveready Industries India Ltd.

### **How does the large geography and diversity of Indian culture impact**

### **your marketing strategy?**

The importance of culture in the world of marketing is huge. People make decisions about consumption of a product based on the cultural influences. Culture has a huge impact on the marketing strategies of a product. As culture affects a consumers' lifestyle, so we focus on the cultural influences. Marketing strategies for urbanites are very different from rural India. Thought processes may vary among different cultures. This could affect the way a marketing strategy is perceived. There's no one-size-fits-all when you market to different linguistic populations. In Eveready we give direct coverage in less than 20K population towns also. The strategy for Metro and Upcountry Rural Markets are very different.

### **What is your assessment of today's Lighting Industry in India and what does the near future hold for this industry?**

Lighting business is a challenging business as it has multiple layers of influencers and various levels of transactions. With the advent of new technologies, the lighting industry continues to transform our society by promoting a healthy and sustainable environment around us. Everyone today is concerned about climate change, pollution and so on. We all are shifting towards renewable means of energy. We should also practice Energy Efficiency and Right Lighting Solutions – right light at the right place at the right time. So our primary focus should be around energy efficient smart lighting solutions.

### **How do you think the lighting industry is changing as a result of new technologies and smart and intelligent**

### **Lighting?**

Technology has caused disruptions in almost all industries and some of the most significant changes technology has brought are in the lighting industry. LED lighting demand is strong for troffers, panel lights, downlights, high bay lights, streetlights and landscape lights. Smart products that come with choices of colour temperatures, wattages, battery backup, sensors, make these products more adaptable in the current working conditions.

LED lighting market offers multiple opportunities for both traditional as well as new players. Eveready has made a remarkable progress in consumer LED lighting segment in limited span of time. I believe that a luminaires portfolio expansion and systematic focus on professional customers will bring us another major opportunity for growth. The coming years are going to be quite challenging with new emerging trends in lighting. We are geared up to touch 1000 crore in lighting segment in next 5 years.

The growing awareness about the importance of energy efficiency, coupled with the government initiatives for more energy efficiency and continuous innovations in LED technology, is a significant factor driving the growth of the lighting industry.

### **How would you compare working culture of Eveready and other Indian organization?**

Eveready offers a strong backbone of Brand and Processes. With a zeal to excel and strengthen the timeless appeal of our brand, Eveready, while being agile, disciplined and performance driven, has held on to the core values and principles of integrity and trust. It is



## CAPTAIN SPEAKS

these core values that have shaped and sustained Eveready for several decades. In Eveready, there are innumerable opportunities to grow. It has a dynamic work environment which is conducive for both personal and professional growth. People, Products and Processes continue to remain our main pillars, as we strive to create a team that works as one big 'Eveready family'.

**For many decades, Eveready was well known worldwide for its strength in manufacturing of consumer batteries. They have extended their consumer reach to the deepest rural areas. Can this strategy be replicated for lighting industry? What are your plans?**

Eveready's strength is the distribution network and last mile direct delivery into deep interior pockets. We have been instrumental in introducing the LED Lighting category in many non-electrical outlets and are present in more than 8 lakhs outlets across the country. With the synergy of existing traditional distribution network, new electrical outlets, e-tailing and modern format retail stores, is our preferred pathway to achieve the desired growth in lighting industry too. Today Eveready is a way of life. We thank everyone to give us a chance to power India. We look forward to build a brighter tomorrow for all.

**What kind of products are you planning to reach out to more consumers?**

The market looks promising and we are committed to provide quality products and best in class service. We offer a complete range of modern LED lighting solutions for residential, commercial offices, industrial and outdoor spaces.

We always believe in constant R&D and

innovation. We are continuously launching new products as per market demand. We are supporting 'Atmanirbharta' by striving to become self-reliant by reducing our dependency on China or any other country. The majority of our products are indigenous.

At present we are focussing on smart

high efficiency and energy saving lighting solutions. We will strive to keep our promises and exceed customer's expectations in all our offerings by providing new, modern and technologically superior products with the aim of building a brighter tomorrow for all.

### IN A LIGHTER VEIN

#### **How do you unwind after a hectic day or week at work?**

I like to work out and listening to music. Both these act as a stress buster along with keeping me fit.

#### **What is/are your favourite holiday destination/s?**

Dubai is the place that I like because it is Indiana – Luxury of West with the Feel of India

#### **What kind of food/cuisine do you like?**

For me the best food is Indian Food specially if it is home made. Rajma Chawal is my favourite dish.

#### **Which is/are your favourite haunts for holiday and family outings?**

Shimla is closest to my heart and I love to hang around Shimla with my family whenever I get time and Chillies is the food joint where I usually visit with my family.

#### **Who is your inspiration in life?**

My mother is the most influential person in my life because she has taught me that hard times can be overcome and that lost battles can be won. She has taught me more than I could have learnt from any book. She sets an inspirational example to me teaching me how to live life and make wise choices, even in the most uncertain situations.

#### **Your favourite book**

“You Become What You Think” - by Vic Johnson is my favourite book. A must read for anyone looking to change their current situation or someone who just needs to refocus. The mind is everything, what you think you become. This book gives great advice and tools on how to modify your thinking and will teach you methods to think bigger and better.

#### **Your favourite Actor (Male / female)**

Amitabh Bachchan and Madhu Bala are my all-time favourites

INTERVIEWED BY ILLUMINATION  
EDITORIAL TEAM

# Lights that bring your home to life



Garnet



Wipro Lighting is proud of being one of the most trusted brands in lighting industry. We have continuously focused on embracing the latest & finest technology to deliver highly efficient products for different lighting application areas & have always believed in offering our customers the best in class, latest design, environment friendly lighting products & solutions. Wipro lighting has introduced IOT based smart connected home lighting solutions that are easy to use and can be controlled through mobile app & Voice control assistant. Wipro Lighting has won several prestigious awards for product design, innovation & quality excellence like the Red dot design awards, Frost & Sullivan award for LED lighting visionary innovation leadership and many more.



- Wide voltage range of 150-300 V
- Anti glare design with deep optics
- Driver with 2.5 kV surge protection
- Good color quality with Ra>80







# Smart Lighting Applications are Unlimited

**IllumiNation** chats with Mr. Puneet Dhawan, Executive Vice President of Orient Electric (Lighting Switchgear and wiring Accessories BU)

### What made you choose Lighting as a profession?

Lighting has always fascinated me. It is one of the most important needs of our lives today.

Even a person with normal vision is as good as blind in a dark room. Lighting enables vision. Lighting is also a productivity tool as it enables us to work in the hours of darkness as well. This was not possible a couple of centuries ago where work stopped at sundown.

I have always wanted to be part of a business that touches the everyday life of people and thankfully I am part of an industry that brings light to the homes of the consumer. Also, when I got into Lighting in 1991, it was a very specialized field and thus motivated me to explore this as a career.

### How did you plan your entry into Lighting?

Actually, it was not planned! I was in another division in my first company as Engineer Trainee and was always fascinated by talks of my lighting colleagues especially professional luminaire segment as they often discussed various lighting projects and lighting designs for various industries etc. So, upon completion of my training period, I requested the management to consider me for transfer to Lighting division which fortunately was accepted and thus started this glorious journey.

### Would you like to share an anecdote or incident related to your career in Lighting?

All Lighting Industry professionals spend a large part of their time among lighting fixtures and lamps and as a result, I have developed a unique habit due to my career in the Indian Lighting

Industry. Wherever I go, be it any office, home, factory, theatre, airport, railway station, highway or street, I am always curious to know what type of lighting and which brand of lighting fixtures are being used at that place This invariably forces me to look up to see the lighting fixtures and lamps installed at every place which I visit. It is disconcerting for others who are present along with you and my family was initially very upset that I always used to look upwards while walking on the street or while in a restaurant or at a shopping mall. In fact, many a times I have stumbled due to this habit. But now after 30 years in this industry, my family has accepted this

habit and I also don't stumble so much anymore.

### What do you think is the future of lighting?

Lighting of today is very dynamic. After the introduction of LEDs in Lighting, products have become very versatile and LED lighting fits into all kinds of applications. The latest innovation in the lighting Industry now is Smart LED Lighting where the applications are unlimited. This future technology has once again woken up the designers and advocates of Lighting to think as to how best we can use this technology for future applications.

## IN A LIGHTER VEIN

### My family...

One of its kind ! No family is perfect, we argue, we fight, we even stop talking at times. But in the end, family is family. There will always be love and we are always there for each other.

### How I pass my free time ....

Though free time is rare but still if I manage to get some, I like to listen to my favorite hindi songs.

### My hobbies.....

Cricket and learning some IT skills.

### Favorite movie...

Hrishikesh Mukherjee's Chupke Chupke and the SRK starrer Chak De.

### Favorite book....

First, Break All The Rules by Marcus Buckingham and Curt Coffman

### Favorite food.....

Aloo Parantha, Kaali Daal with Lachaa Parantha

### Favorite hero....

Dharmendra and Akshay Kumar

INTERVIEWED BY ILLUMINATION  
EDITORIAL TEAM



# Shyam Sujan wins First Global ISA IDOC Award



During the AGM, Mr. Shyam Sujan, Secretary General was presented Global Development Cooperation in India award by President Mr. Avinder Singh. Originally this award was accorded to Mr. Shyam Sujan during a global meeting by Mr. Warren Julian, Emeritus Professor, the University of Sydney and Founding Chairman of International Solid State Lighting Alliance.

Global Development Cooperation in India award handed over to Mr. Shyam Sujan.



**ELCOMA**  
Electric Lamp and Component  
Manufacturers Association of India



## CONFERENCE ON DIGITAL LED – FUTURE OF LIGHTING

Free Registration for Lighting  
Stakeholders

4th November 2022 at Jacaranda Hall,  
India Habitat Centre, New Delh-110001, India

Sponsors:



For registration: log on to [www.elcomaindia.com](http://www.elcomaindia.com) or Contact: Deepak Kumar,  
Mob: +91 9818629465, Ph: +91- 11-41556644, Fax: 91-11- 46577582  
E-mail: [deepakkumar@elcomaindia.com](mailto:deepakkumar@elcomaindia.com)





# Be road ready Dash cameras: Now you can prove it really happened



Life is full of surprises. With our new range of premium quality dash cameras, you can capture them all. Stay focused and enjoy greater peace of mind knowing that no matter what happens on the road, you'll have the evidence to prove it. Monitor and evaluate your driving, settle disputes and claims, and capture all those magical road trip memories in full HD. Prepare for the unpredictable, be road ready.\*

Discover our new range of dash cameras  
at [osram.com/dashcams](https://osram.com/dashcams)

# OSRAM





# Havells Transforms Thiruvananthapuram Airport with Dynamic Lighting System

Using DMX based LED Lighting Solution, Havells have made this busy International Airport a visitor's dream







Every city has some structural landmark that takes a place of pride. A building, monument or statue can be a testament to a city's history and culture, a symbol of what the city stands for, or simply a work of modern art that adds aesthetic value to the city. In a new study, researchers discovered that attractive urban cities help attract highly educated individuals, tourists, new residents and experienced faster housing price appreciation and educational attainment grew faster in such "beautiful neighbourhoods". Today, urban scholars and politicians are converging on a new "City Beautiful" perspective which helps in the growth of the city and better revenue for the government and less expenditure on health facilities.

A decade ago, airport terminals were only a practical way to travel long distances. It was just a place to dash

through when your name was called for final boarding or to snooze uncomfortably on a hard chair when your flight was delayed. However, things have changed, and airports are now a vibrant example of aesthetic and cultural life and have progressed from simply the beginning and end of journeys to something larger, a place to relax, eat, and a 'show and tell' for celebrities revealing their 'airport looks' which creates a buzz for the paparazzi.

Airports would not be able to be in their full glory without having phenomenal interiors and exteriors that draw the attention of millions of travelers. Each airport has its own way of engaging people with its vibrance and uniqueness.

A principal factor that comes into play while designing an airport impressively is its illumination, which brings all its magnificence into the spotlight. In addition, LED lighting systems create a

safe and exciting ambiance throughout, setting the stage for a wholesome airport experience while fostering a sense of uniqueness and security and establishing an emotional connection with the people. A thoughtful lighting plan inspires curiosity and builds a positive and exciting visitor experience, making the airport the primary choice of travelers.

Trivandrum International Airport was the first airport in the Indian state of Kerala in Thiruvananthapuram. The then Prime Minister Shri V. P. Singh designated it as India's fifth international airport in 1991. TIA is an "all-weather" airport and has received the ISO 9001:2000 certification. It is the second largest and busiest airport after Cochin International Airport in Kerala. The Trivandrum International Terminal is located on a 750-acre site about 3.7 km west of the city center, 16 km from Kovalam Beach, 13 km from Technopark Thiruvananthapuram and 21 km from the proposed Vizhinjam International Seaport. Trivandrum airport is strategically located at the southern tip of the Indian subcontinent; it serves as the shortest hopping point from India to Sri Lanka and the Maldives and is thus the preferred airport for international tourists.

Havells recently carried out a project for the illumination of Trivandrum International Airport in Kerala with





## COVER STORY

Colorscape range of DMX based LED Lighting solutions. Havells provided 160+ LED lights points in DMX color to strengthen the architectural elements of the airport.

Each structure was thoughtfully designed with outdoor-rated, premium LED luminaires with precise beam angles. Keeping all luminaires as far away from the human eye as possible was important so that lighting can create stunning effects on the facade.

Upon entering the Airport Campus the entry gate and watch towers welcome travelers with refreshing colour themes. Similarly, the International and Domestic terminals have been transformed with theme lighting and are now infused with life and vibrancy.

The entry gates are caressed with DMX based Linear wall washers. The length of DMX based linear wall washer light fixtures have been decided considering the requirements of the mounting details as well as the fixture's durability in exterior applications and severe weather environment of Kerala.

DMX based linear wall washer light

fixtures with low glare and elliptical distribution were used to highlight the area around the International Watch Towers. The ceiling of the International terminal (arrival as well as departure section) are highlighted with DMX based LED projector light fixtures. The tall sturdy columns are also accentuated on both sides with help of DMX based LED projector light fixtures.

The Domestic Terminal has DMX based LED Strips and DMX based floodlights to highlight the structure. The DMX based LED projectors are compact in shape but delivering requisite punch on target areas. The purpose was to use light weight fixtures and minimalistic form factors, so that the aesthetic value during the day is not compromised. The high efficacy DMX based light fixtures were able to bring in power savings too, adding energy efficiency to the Dynamic Lighting solution as well.

As part of Azadi Ka Amrit Mahotsav, the 75th Independence Day celebrations, Thiruvananthapuram International airport was decorated with 'Tiranga' lights and special installations based on the theme of "Independence". The entire

façade of the airport came alive in the colours of the 'Tiranga' as dusk set in and the lights were turned on.

Havells has illuminated numerous structures including Salem Railway Station, Mathura Cantt Railway Station, Dakshineswar Metro Station (Kolkata), Ujjain Smart City – "Shri Mahakal Lok" – Entry gate of Shri Mahakal Lok, Lake Front promenade, Lotus Pond and Shiva Stupa consisting of Statues of Rishi, Amma Memorial Chennai, Lucknow Smart City, Sabj Burj (Delhi), Sunder Nursery (Delhi), Nagpur Railway Station, New Jalpaiguri Railway Station, to name a few in India. The goal of architectural lighting design is to strike a balance between the art and science of lighting to generate mood, aesthetic interest, and enhance the experience of a space or location while still meeting technical and safety standards.

**AUTHOR : MR. PARAG BHATNAGAR,  
PRESIDENT, HAVELLS INDIA LIMITED**

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





# ILLUMINATING THE WORLD

R.K. Group is a family owned and operated business with roots spanning over half a century. R.K. Group is one of the largest manufacturers of LED lighting products in World. We have 18 state of the art manufacturing facilities and over 100 Million USD in revenue.

## R&D

We constantly keep investing in our R&D activities to ensure that our products are of the highest quality.

## MFG. CAPACITY PER DAY



## LEADING VALUED CUSTOMERS



## CERTIFICATION | OMS ISO 9001 : 2015 | EMS ISO 14001 : 2015 | OHSMS ISO 45001 : 2018

# THE LARGEST MANUFACTURERS OF LED LIGHTING PRODUCTS IN WORLD



# Luker Illuminates Statue of Unity

A tributary endeavour to the Iron Man of India, the Statue of Unity is an iconic 182-metre-tall statue situated on the isle of Sadhu-Bet. Located between the Mountain Ranges of Vindhyachal and Satpura, this monument has many other attractive tourist spots in its proximity such as the Valley of Flowers, the Shoolpaneshwar Sanctuary and sacred temple, the Sardar Sarovar Dam and its water dykes, the scenic Zarvani Falls and majestic palaces of Rajpipla. The grand monument along with a picturesque backdrop makes it an ideal destination for eco-tourism.

The Government of Gujarat had assigned the task of constructing the Statue of Unity to the 'Sardar Vallabhbhai Patel Rashtriya Ekta Trust' (SVPRET), chaired by the Hon'ble Chief Minister of Gujarat. SVPRET has executed the project and undertaken all activities related to the construction of Statue of Unity through the Sardar

Sarovar Narmada Nigam Limited (SSNNL).

A countrywide program which covered several villages for 'Loha Campaign' were conducted during the year 2013-14. A total of 169,078 used farm tools and soil samples were collected from farmers across the country as their voluntary contribution to the iconic project. In this 'Loha Campaign' which is believed to be one of the largest social mobilization drives in the world, 134.25 metric tonnes of iron were received from villages across the nation. This iron was converted into reinforcement bars weighing 109.17 metric tonnes and used in the construction of the project. Soil collected from various parts of the country was used to make the symbolic 'Wall of Unity'.

The Statue of Unity stands as a naturalistic and inspirational portrayal of Sardar Patel, donning his characteristic garments and a pose that reflects dignity,

confidence, iron will and kindness. Bronze cladding adds richness and visual appeal to the Statue. Sophisticated, state-of-the-art surveying technologies like, Light Detection and Ranging (LIDAR) and Telescopic Logging were used for the construction of the Statue.

The construction of this National Monument utilised approximately 70,000 metric tonnes of cement, 18,500 metric tonnes of reinforcement bars and 6,000 metric tonnes of structural steel.

LUKER was selected to design and light up the areas with suitable lighting solution. Luker completed the project using LED Strip Lights,.

**AUTHOR : E.SIVARAMAKRISHNAN,  
DIRECTOR TECHNICAL, LUKER  
ELECTRIC TECHNOLOGIES PVT. LTD**

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





# light + LED expo

INDIA

3 – 5 Nov 2022  
Pragati Maidan, New Delhi

*Ace your sourcing and networking game with just 1 visit!*

CHOOSE FROM 175+ LIGHTING SUPPLIERS AND 1000+ PRODUCTS



*Gain industry insights!*

Attend the knowledge session on  
Digital LED – Future Of Lighting.

4 November 2022 | 10:30 AM – 17:00 PM

Scan the QR code  
to register for free



Register to visit



messe frankfurt



ELCOMA





# ELCOMA VISION 2030



A roadmap for Indian Lighting Industry for next few years



## MISSION

Ensure participation of all ELCOMA members on innovation in lighting technologies

Government to invest heavily in Infrastructure to achieve ELCOMA's vision

## VISION

### SELF RELIANCE

To create a self-reliant Lighting Industry by 2030 with local for local manufacturing of electronics components based on electronics and semiconductor PLI initiatives from Government

### INNOVATE

Create a Global Centre of Excellence focusing on research and innovations on futuristic technologies

### EXPORT PROMOTION

With adequate support of the government, make India as an export hub for Lighting products and capture at least 10% of Global Lighting market by 2030

### GROWTH

Achieve Industry growth of CAGR 10% by 2030 based on government initiatives to increase per capita public light points



# OBJECTIVES

01

## Encourage Domestic Growth

- Stimulate industry with government support
- By 2030 Indian Lighting Industry to grow CAGR 10%
- Grow from present Rs. 23000 crores to Rs. 45000 crores by 2030

02

## Promote Efficient and energy-friendly technology

- Foster low energy consumption technologies
- Support LVDC
- Encourage Mini LED concepts

03

## Make Customized and Cost competitive products for export

- ELCOMA members to invest to create manufacturing capacity as per global demand
- Achieve exports of at least 10% of global market by 2030

04

## Encourage Local Manufacturing of Components

- Advocate more government support
- Achieve 100% self-reliance on electronic components

05

## Support Export Promotion

- Leverage FTAs to drive up exports
- Government to play important role in creating global relationship to create export support

06

## Promote LED and laser dominated futuristic Lighting

- Smart Lighting for everyday use
- Connected & digitized lighting solutions
- Human centric approach to enable well being in human life
- New Technologies

07

## Focus on renewable technologies

- Promote Solar powered lighting solutions
- Focus on solutions that help manage sustainability goals for the country

08

## Create Centre of Excellence

- Promote Innovation and Research in Lighting and Illumination
- Make India a hub for IOT (Software and Hardware design) development for the world
- Prepare India Centric standards
- New Technology development

09

## Create Lighting and Illumination University

- Offer Illumination Courses for UG, Diploma, Graduate/ Engineering, PhD
- Incentivize research on new technologies at campuses
- Enable campus recruitment for Industry
- Extend global interaction

ILLUMINATION EDITORIAL TEAM



# ELCOMA 52nd AGM at Delhi



The board members during the 52nd AGM

The 52<sup>nd</sup> AGM was held on 13th September 2022 at India Habitat Centre. After almost 2 years a physical meeting was held. The President Mr. Sumit Joshi was unable to attend. On behalf of president Mr. Avinder Singh, vice-president took the chair read out his annual report.

In his speech he said “The last 2 years have been very volatile, as the world faced an unprecedented crisis in the form of the COVID-19 pandemic that ended up affecting millions of lives, and severely paralyzing all businesses and economies. Multiple waves of the COVID-19 pandemic and geopolitical unrest caused the economies of the world to slow down. But even at the peak of this crisis, I am proud to say that all ELCOMA members stood together as one big family and despite facing financial losses during the lockdown, they prioritized their employees above all else and offered extensive support in the form of medicines, oxygen concentrators and other assistance as necessary.

ELCOMA has always been proactive in understanding the impact of various government policies on the industry and taking the necessary actions to support our sector. By providing the country

energy efficient products at the most affordable prices, as an industry, we have a big role to play in ensuring the sustainable growth of our country. We have significantly contributed towards the growth of country's manufacturing sector for last 80 years and will continue to do so in future through greater localization of all LED lighting products”

He announced about ELCOMA's Vision 2030 plan which will focus on:

- a) Education in Lighting
- b) Innovation
- c) Product testing Lab
- d) R&D on new technologies
- e) Expert promotion

He further said “Our vision plans always

reflect the common goals of the industry, and as a result we have been able to successfully deliver on them in the past. I hope that the plan currently under development, once finalized, will also be effectively implemented by 2030. I am confident that we have the full cooperation and support of ELCOMA members.

I can see many new faces that have joined ELCOMA over the past two years. I also welcome them to the ELCOMA family and hope that they will find their association with us productive and helpful.

In the end I express my sincere regards to all ELCOMA members, and wish fellow office bearers and the ELCOMA Secretariat for their immense support and cooperation during my tenure as



View of ELCOMA members during the AGM

President and Vice President.” He also welcomed new Board members of ELCOMA on that day.

The meeting continued with presentations by 4 committee chairpersons. The treasurer Mr. Anuj Poddar explained the salient features of the Balance Sheet and Profit and Loss account which was approved by the house.

Mr. Sunil Sikka informed about the Light India exhibition being held from 3rd to 5th November 2022 at Pragati Maidan. Since Mr. Piyush Goyal, Minister of Commerce and Industry is

likely to inaugurate it was suggested that more number of ELCOMA members should participate in the exhibition.

Mr. Shyam Sujan, Secretary General, ELCOMA conducted the Elections for Office Bearers for the year 2022-24. He announced that following were elected unopposed.

- President - Mr. Avinder Singh, OSRAM
- Vice President - Mr. Anuj Podar, Bajaj Electricals Ltd.
- Treasurer - Mr. Nirupam Sahay, Dixon Technologies India Limited.

The new office bearers were welcomed by all the members, and they took chair at dias. Mr. Avinder Singh, the newly elected president appreciated the work done by Mr. Sumit Joshi, who retired as president. He expected to continue to work in the interest of ELCOMA members and development of Lighting Industry with help of his co-office bearers and ELCOMA members.

The meeting came to an end with a vote of thanks to members present and also special thanks to Signify Innovation for sponsoring the meeting.

**ILLUMINATION EDITORIAL TEAM**

## ELCOMA OFFICE BEARERS 2022-23



**Mr. Avinder Singh**  
President, ELCOMA



**Mr. Anuj Poddar**  
Vice President, ELCOMA



**Mr. Nirupam Sahay**  
Treasurer, ELCOMA



**Mr. Shyam Sujan**  
Secretary General, ELCOMA



**Mr. Sunil Sikka**  
Advisor, ELCOMA



**Mr. Sumit Padmakar Joshi**  
Immediate Past-President, ELCOMA

### THE GOVERNING BODY 2022-23

|                             |                          |   |
|-----------------------------|--------------------------|---|
| 1. President                | Mr. Avinder Singh        | OSRAM Lighting Private Limited, Gurgaon           |
| 2. Vice-President           | Mr. Anuj Poddar          | Bajaj Electricals Ltd, Mumbai                     |
| 3. Treasurer                | Mr. Nirupam Sahay        | Dixon Technologies India Limited                  |
| 4. Immediate Past-President | Mr. Sumit Padmakar Joshi | Signify Innovations India Ltd, Gurgaon            |
| 4. Member                   | Mr. Raju Bista           | Surya Roshni Ltd., New Delhi                      |
| 5. Member                   | Mr. Mathew Job           | Crompton Greaves Consumer Electrical Ltd., Mumbai |
| 6. Member                   | Mr. Sunil Vachani        | Dixon Technologies (India) Pvt.Ltd., Noida        |
| 7. Member                   | Mr. Rakesh Zutshi        | Halonix Technologies Limited, Noida               |
| 8. Member                   | Mr. Parag Bhatnagar      | Havells India Limited, Noida                      |
| 9. Member                   | Mr. Shekhar Bajaj        | Hind Lamps Limited, Shikohabad                    |
| 10. Member                  | Mr. Gautam Seth          | HPL Electric & Power Pvt. Ltd., New Delhi         |
| 11. Member                  | Mr. Krishan Sujan        | LEDVANCE Private Limited, Gurgaon                 |
| 12. Member                  | Mr. S. K. Bansal         | Mercury Lamps Pvt. Ltd., Rishikesh                |
| 13. Member                  | Mr. Puneet Dhawan        | Orient Electric, Noida                            |
| 14. Member                  | Mr. Vineet Agrawal       | Wipro Enterprises Limited, Bangalore              |
| 15. Member                  | Mr. Mohit Sharma         | Eveready Industries India Ltd                     |
| 16. Member                  | Mr. Randir Raj Mehra     | Jaquar Lighting, Gurgaon                          |
| 17. Member                  | Mr. Anirudh Kajaria      | Century LED, Kolkata                              |
| <u>Special Invitee:</u>     |                          |   |
| 18. Member                  | Mr. E. Sivaramkrishnan   | Luker Electric Technologies Pvt.Ltd., Kochi       |
| <u>Secretariat:</u>         |                          |   |
| 20. Advisor                 | Mr. Sunil Sikka          | ELCOMA, New Delhi                                 |
| 21. Secretary General       | Mr. Shyam Sujan          | ELCOMA, New Delhi                                 |
| 22. General Manager         | Mr. Amal Sengupta        | ELCOMA, New Delhi                                 |



# Design Lighting for Hockey Stadiums for International and National Events

The article discusses new guidelines issued by FIH for Televised Outdoor Hockey events

Illumination of sports grounds have always been very interesting and a challenging subject. Various levels and class of plays influence the quantity of light, while the quality of light needs to be excellent for all of them. The requirements of players, umpires/referees, match officials remain critical for each class of event and is a guiding factor in selection of lighting solution. The live TV broadcasting of the matches, events, brought in another major angle in designing lighting system of today for sports stadium. The advancement in the broadcasting technology has increased the ask for higher quality of Illumination, thus, the international federations of various sports revised their lighting standards to address these changing needs.

## Lighting of Hockey Stadiums

FIH (International Hockey Federation) has prescribed the requirements of illumination in their standard released earlier. Events have been classified in 'Televised and Non- Televised' group and further categorization has been done

based on the training, competitive - non-competitive, club / national / international levels. The advancement in high-definition digital television technology has resulted in telecast of sports events in a quality never experienced before by the viewer. FIH has been working together with broadcasting and sports lighting companies and has been carrying out research in order to determine the best quality lighting for an unparalleled televised viewership experience.

FIH has released the new guidelines for Televised Outdoor Hockey events. FIH guidelines take care of almost all parameters to ensure that higher lighting standards are maintained and excellent visual environment is provided to all categories of events. The standard provides the guiding design principles. and talks about the key terms in sports lighting and camera positions.

FIH Lighting Standard recommends 'three levels' of lighting for broadcast quality. The users, event managers, authorities need to categorize their

facility accordingly and provide lighting.

TV1 - This is for the venue hosting top level international matches, and where broadcasters use HDTV/4K cameras in the main as well as orthogonal field camera positions.

TV2 - This is for the venue that hosts televised hockey event and where broadcaster use camera principally located at 'Main Camera' position.

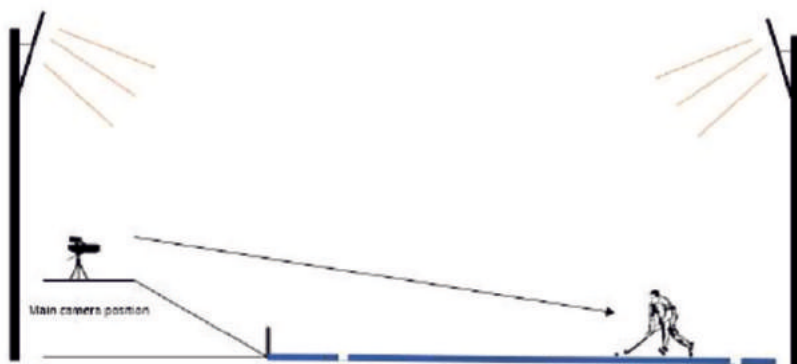
TV3 - Here venue is supposed to conduct daytime events and lighting is required to enhance any low natural light conditions.

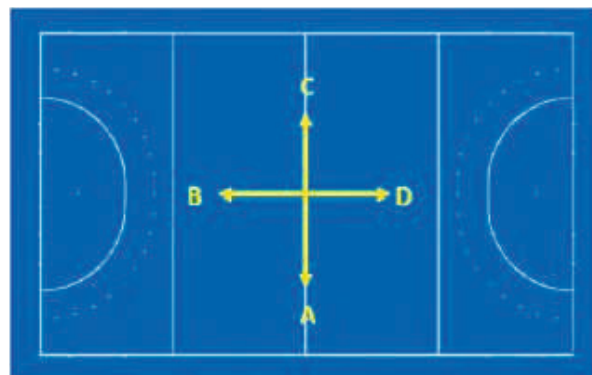
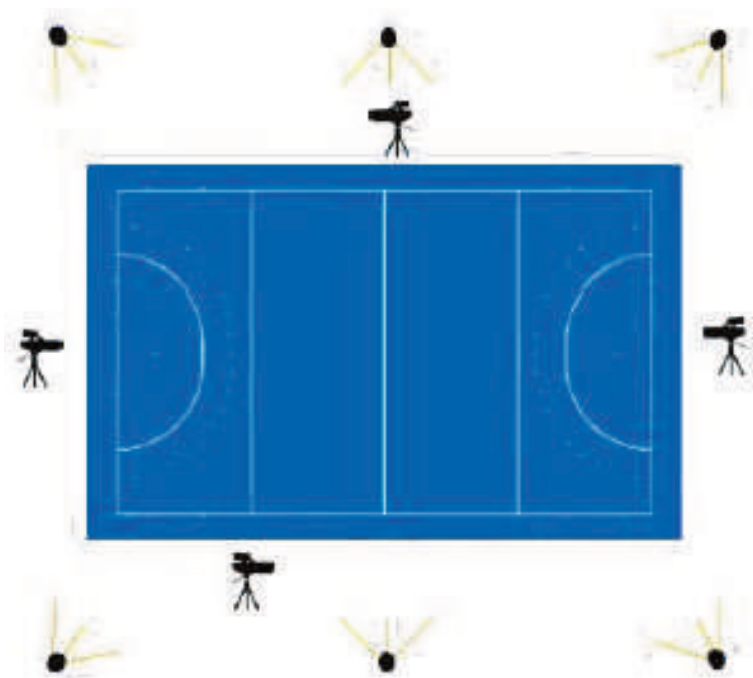
## Camera Positions and Luminaire positioning.

'Main Camera' is on elevated platform and is generally in a stand. Luminaire positioning should be behind the main camera.

Fixed orthogonal camera positions - For the category one (TV1) type of events and in cases where higher level of broadcast events are expected, cameras are also positioned on ground level on each four sides. The cameras in B & D directions (as shown in figures) i.e. behind goal posts are placed at a higher level instead of ground level.

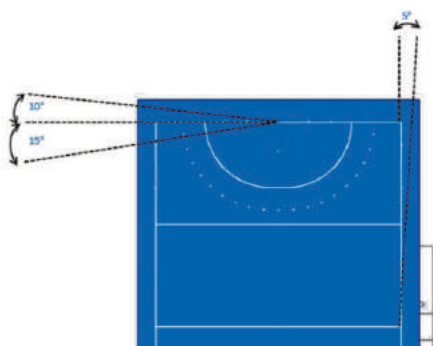
Luminaires can be mounted on the roof tops of the stadium or on the High Masts placed along either side of the field. High masts are always erected outside the perimeter margins of field. These masts should be installed 10 degrees





beyond the endlines from the Centre of goal (as shown in a figure below). They should not be placed 15 degrees before endline of the center of the goal. Also, these masts should be placed after the 5 degree line of the sidelines from the center of the line.

**Calculation and Measurements**



FIH clearly specifies the Grid where the illumination level is to be measured. Thus, it is important to adhere to the same grid while computing the design calculations. A grid of maximum size of 5m x 5m should be laid out with the point at the center of the field covering FOP (Field of Play) and Perimeter Margins.

**Illuminance – Horizontal & Vertical**  
Vertical Illuminance shall be measured

with the light meter on suitable tripod at 1m height above the Hockey Turf. Vertical illuminance towards Main Camera shall be measured with a photocell at 105 degrees with respect to horizontal while aiming towards the main camera. In case of Orthogonal directions, measurement shall be done at each grid point in all four directions with a photocell held at 90 degrees to horizontal turf.

Horizontal Illuminance shall be measured at each grid point with photocell placed on hockey turf or on tripod at 1m height above the turf. Photocell should be facing upwards 180 degrees.

Minimum adjacent uniformity ratio (MAUR) should be calculated for each Horizontal illuminance and vertical illuminance toward main camera at every test position.

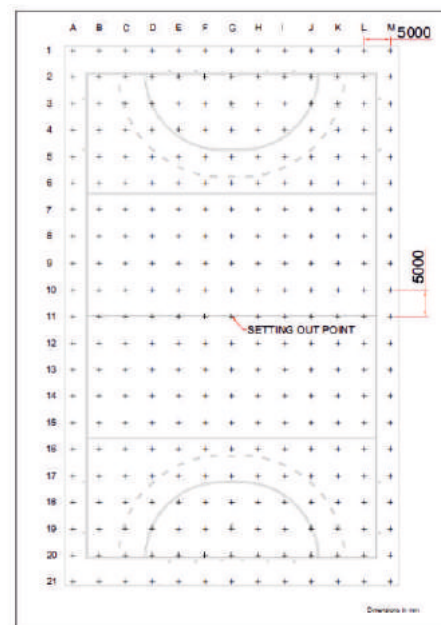
**Lighting Parameters for 11 a side Hockey (Outdoors)**

FIH guidelines provide the values for Illuminance level as well as Uniformity for all the classes for providing quality lighting for the broadcast. The table reproduced from the Standard Provided by FIH provides the required values of

illuminance and uniformity.

**Conclusion - Prepare Facility for International / National Hockey Events**

These guidelines are intended for anyone planning to organize national, international hockey events that will be televised. Adopting these guiding principles ensures the best results that can be achieved for television viewers, players, spectators and the environment. Certain other factors like glare, flicker,





|  |   |                     | TV1                  | TV2                  | TV3                  |             |
|--|---|---------------------|----------------------|----------------------|----------------------|-------------|
|  | Vertical Illuminance - Main Camera            | $E_{Vmc}$           | $\geq 1650$          | $\geq 1400$          | $\geq 750$           |             |
| Maintained Average Illuminance (LUX)   | Vertical Illuminance-Orthogonal Field Cameras | Dir. A              | $\geq 1200$          |                      |                      |             |
|  |   | Dir. B              |                      |                      |                      |             |
|  |   | Dir. C              |                      |                      |                      |             |
|  |   | Dir. D              |                      |                      |                      |             |
|  | Horizontal Illuminance -                      | $E_h$               | $\geq 2000$          | $\geq 1650$          | $\geq 1000$          |             |
| Illuminance Uniformities   | Vertical Illuminance-Main Cameras             | $E_{Vmin}/E_{Vmax}$ | $U_{v1}$             | $\geq 0.60$          | $\geq 0.60$          | $\geq 0.35$ |
|  |   | $E_{Vmin}/E_{Vavg}$ | $U_{v2}$             | $\geq 0.65$          | $\geq 0.65$          | $\geq 0.45$ |
|  | Vertical Illuminance-Orthogonal Field Cameras | $E_{Vmin}/E_{Vmax}$ | $U_{v1}$             | $\geq 0.50$          |                      |             |
|  |   | $E_{Vmin}/E_{Vavg}$ | $U_{v2}$             | $\geq 0.60$          |                      |             |
|  | Horizontal Illuminance                        | $E_{Vmin}/E_{Vmax}$ | $U_{v1}$             | $\geq 0.65$          | $\geq 0.65$          | $\geq 0.65$ |
|  |   | $E_{Vmin}/E_{Vavg}$ | $U_{v2}$             | $\geq 0.70$          | $\geq 0.70$          | $\geq 0.70$ |
|  | Minimum Adjacent Uniformity Ratios            | MAUR                | Vertical             | $\geq 0.65$          | $\geq 0.60$          |             |
|  |   |                     | Horizontal           | $\geq 0.65$          | $\geq 0.60$          | $\geq 0.60$ |
| Flicker Factor   |   |                     | $\leq 5\%$           | $\leq 15\%$          | $\leq 30\%$          |             |
| GR - Max   |   |                     | $< 50$               | $< 50$               | $< 50$               |             |
| CRI  |   |                     | $> 70$               | $> 65$               | $> 65$               |             |
| Colour Temperature (K)   |   |                     | $> 5000$<br>$< 6200$ | $> 4000$<br>$< 6200$ | $> 4000$<br>$< 6200$ |             |
| Additional Requirements for TV1  |   |                     |                      |                      |                      |             |
| The maximum vertical illuminance shall be within SMRZ  |   |                     |                      |                      |                      |             |
| The minimum vertical illuminance FOP shall not be within SMRZ  |   |                     |                      |                      |                      |             |
| Both SMRZ shall have same quality of lighting  |   |                     |                      |                      |                      |             |
| The maintained average vertical illuminance in Dir A shall be greater than the average vertical illuminance in directions B,C or D   |   |                     |                      |                      |                      |             |
| As far as possible the vertical illuminance in each orthogonal directions of TV2 should comply with the requirements of category TV1 |   |                     |                      |                      |                      |             |

color temperature, colour rendering, etc which have not been specifically discussed must also be considered while selecting the lighting system. These are basic hygiene factors and should be addressed as per the values mentioned in the table. As the broadcasting world is

changing fast, catering to four generations of the audience, application of IoT based system coupled with adherence to the Parameters recommended by FIH would provide a Perfect Unique Fan Experience.

**AUTHOR : SHREEKANT PHANSE, NATIONAL APPLICATION SPECIALIST, SIGNIFY INNOVATIONS INDIA LIMITED**

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

**ECOLINK**

LAMBA CHALE, BRIGHTEST JALE

# ECOLINK LED LIGHTS



LED Strip Lights

LED Spot

LED Downlighters

LED COB

LED Surface

 BIS Approved

 Upto 15 Years Life

 Uniform Brightness

 VoltSafe Technology

For more information, please visit our website [www.ecolinklighting.com](http://www.ecolinklighting.com)



# Crossing the Chasm

Sudeshna Mukhopadhyay on adapting global application standards /regulations in India to focus on light quality driven specifications

Recent updates in European/global lighting application standards for functional areas dwell around Human centricity with emphasis on quality aspects of light and lighting. With the Indian consumers and policy makers solely focused on energy efficiency, product specifications driving light quality have not been well addressed. It is imperative to bring to attention the dire need to shift our paradigm, to ensure that energy efficient LED lighting also enables well-being of humans and ecology.

## The Past

The past decade has been designated as the disruptive decade in the lighting industry as it moved from analogue conventional lighting to the digital LED era. With this transition to digital domain, the lighting industry is far more visible, important and recognized than ever before. LED lighting has helped to bring down the installed load and therefore energy consumption

between 50-60% in most cases. India has grown to be one of the largest consumers of general LED products, mainly manufactured or assembled in India.

Thus far, for functional lighting, the singular focus and primary specifications of LED products in India have been around 'higher system efficacy' i.e. lumens/watt and to some extent life class, along with compliance to safety (and photobiological) standards. This is understandable that in developing economies like India, energy consumption and therefore cost is always on rise. Managing the demand and peak load has been well addressed by switching to energy efficient LED lighting. Concurrently, government driven bulk purchase initiatives paved the way for local manufacturing with downward spiraling prices leading to wide adoption of new technology.

It has been heartening to note that India has been one of the first countries to publish the standards (BIS) for LED

products, including mandatory compliance and labelling.

It is true that high energy consumption leads to climate imbalance. The Lighting industry has continuously and relentlessly addressed that issue well above benchmark values and will continue to do so as LED technology progresses.

The point of concern is that the sole focus on lumen/watt as the key evaluating specification of lighting products has led us to let go and suboptimize quality parameters like surface brightness and glare control, colour quality, intensity distribution, lumen maintenance through lifetime, flicker, spill light, light trespass, light pollution, etc which impact visual acuity, comfort, psychological and biological well-being of humans and nature.

## The Future - is Now

Now is the right time for the lighting industry to shift paradigms and cross the



chasm and collectively pave the way for accelerated adoption of Human and Ecology Centric Lighting in India. With rapid technology advances, both can co-exist.

The impact of light on health and well-being is well accepted and established in both scientific and design community. The global standards and regulatory bodies are now updating or have already updated the application standards to be more inclusive of non-visual impact. Needless to mention that COVID has taught us that human and environment well-being are our most precious resources.

Out of the recent updates, the ones which are of interest and relevant to India, are EN 12464-2021 (Light and lighting - Lighting of work places - Part 1: Indoor work places) and BS 5489 1:2020 (Design of road lighting Part 1: Lighting of roads and public amenity areas — Code of practice), apart from WELL Building Standard™ version 2 from the International Well Building Institute (IWBI).

The EN 12464-1 clearly states in its foreword

*Lighting requirements for task areas to fulfil visual tasks are given a close relation to the space in which they are carried out. Technologically LED has taken over as the main light source from previous technologies. The main changes with respect to the previous edition are:*

- *The recommendations (given in the tables in Clause 7) take user needs more into account than in the past. Thus, the requirements for necessary illuminance (according to Clause 7) are more differentiated.*
- *The impact of visual and non-visual (non-image forming) effects of light on people's performance and well-being are elaborated (in the new informative Annex B.)*
- *Requirements for walls, ceilings and*

*cylindrical illuminances (are moved from the main text to the tables in Clause 7) for increased visibility and usability.*

- *A new chapter on design considerations (Clause 6) gives advice on how to apply the requirements when designing lighting for visual tasks and activities within a space.*
- *Relation between task area and its immediate surround and the background area is more detailed*
- *Glare requirements have been clarified for improved usability including clarification for shielding in 5.5 and recommended practices for UGR in non-standard situations has been added in a new informative Annex A.*
- *Flicker and stroboscopic effect is updated*

Further it also elaborates that

*The main criteria determining the luminous environment with respect to electric lighting and daylighting are:*

- *luminance distribution*
- *illuminance*
- *glare*
- *directionality of light, lighting in the interior space*
- *colour rendering and colour appearance of the light*
- *flicker*
- *variability of light (levels and colour of light)*

In the BS 5489 1:2020, the impact of lighting on ecology, obtrusive light, need to vary lighting level and colour across different times of the night, has been categorically addressed. Following are some statements which are excerpts from the standards

- *Environmental issues associated with road lighting are prime considerations when designing a new*

*or replacement lighting scheme.*

- *The environmental impact of lighting can be reduced by varying the lighting level to allow the appropriate lighting class to be applied at the relevant time, even switching off at certain times if deemed appropriate.*
- *Minimizing obtrusive light (Sec 4.2.3)*
- *Effect on ecology, flora and fauna (Sec 4.2.4)*
- *Lighting and human health*
- *When specifying a light source, designers should avoid light sources which produce excessive flicker*

The subject of lighting and its impact on visual and non-visual responses is universal in nature and is applicable to Indian ethnicity as well.

Currently, quite a few BIS standards are being updated and this is the perfect time for us to embrace the true potential of digital lighting and look beyond energy efficiency, while updating the same. It is imperative to benchmark and adapt the global standards especially in lighting applications, without being judgmental on suitability or its ease of use in India. The ongoing revisions of IS 1944 and IS 3646 should be inclusive of impact on human and ecology's health and well-being and not be restrictive to quantity and limited quality parameters in lighting. This is an essential requirement.

The new IS application standards, when accepted, would imply upgraded product specifications to meet the design and application requirement in the new standards.

- LED source - higher quality, consistency and stability in color parameters
- Driver - high power delivery, low flicker, low harmonics, high power factor, easily controllable and tunable
- Optics – Material and design,





ensuring balance in luminance, appropriate intensity distribution, glare, spill and obtrusive light control

- Better lumen maintenance and life class of hardware and electronics, ensuring that e-waste is minimised with less disposal
- Choice of form factors - truly exploiting the full potential LED from size point of view with superior finish, also ensuring installation and maintenance ease.

All these and more should be adaptable to Smart and Connected platforms with simple installation techniques and interfaces. They need to be designed around Indian building and city layouts and user habits. As LED technology progresses, this could open up new design possibilities, with data processors being integrated within the light emitting chip

To facilitate wider acceptance and

adoption of human centric specifications, regulators should explore possibility of mandatory 'Light Quality/Wellness Category labelling' along with Energy and Risk Group Labelling for certain product categories. Of course, criteria guidelines, measurement procedures and Testing facilities need to be set up for this.

Concurrently, awareness and education will be a prime mover in migration and adoption of new technologies and application standards. Closer co-operation between independent lighting designers, application specialists, educators with manufacturers and their alliances, is needed to create awareness, conduct impact analysis study and future research.

India has already established its legacy in making standard LED products affordable, within a very short time. Smart lighting products are advanced semiconductor devices. Prices of such components become affordable with

consumption scale. With collaborative and collective focus on creating awareness, and government initiatives on Make in India, higher grade products should be affordable and will become standard specifications in times to come.

Lighting Industry in India is suitably poised to move to next level. Surely with advanced standards and technologies, the market size will grow, be technologically matured - opening up new business opportunities for the manufacturers, component suppliers, regulators, testing laboratories, product and application designers.

In summary, augmented IS standards in lighting applications will augur well for lighting industry. It will not only be a profitable growth lever, but also make the industry a socially committed and responsible stakeholder, that considers Human and Ecological Health and Well-being, as its core values for innovation, manufacturing, design and application.

**AUTHOR : SUDESHNA MUKHOPADHYAY,  
CONSULTANT AND VICE PRESIDENT  
WITH HAVELLS INDIA LTD**

*Several sections of this article contain direct excerpts from published standards for reference. No copyright violation is intended*



P-VIP® Original



Fake Lamps

# Beware of fake P-VIP® projector lamps!



## Please buy only original!

As one of the best-selling OSRAM lamps, counterfeits of P-VIP® projector lamps are seen in market.

Please be careful! No one can guarantee the light performance of these counterfeit lamps.

Sensing is life

amun OSRAM



# Signify partners with Samarthanam Trust to set up 10 computer labs for visually impaired students across India



Signify has partnered with Samarthanam Trust to set up 10 computer labs in blind schools across India, under its EcoLink Cares CSR Program. This initiative will enable more than 1,000 visually impaired students to improve their digital literacy and also access digital learning opportunities to support their school education, thereby preparing them for better career opportunities in the future.

Under this program, each school will be equipped with a modern computer lab featuring latest equipment and audio-visual aids. This will enable the visually impaired students to access E-Sugam Pustakaalaya, an online library that hosts more than 11 lakh digital audio book titles, to supplement their academic

performance. Additionally, the company is also upgrading the overall infrastructure in these labs to ensure a more comfortable environment for children to learn, grow and explore.

The program was recently inaugurated by the company at an event organized at the Rashtriya Virjanand Andh Kanya Senior Secondary School in Vikaspuri, New Delhi.

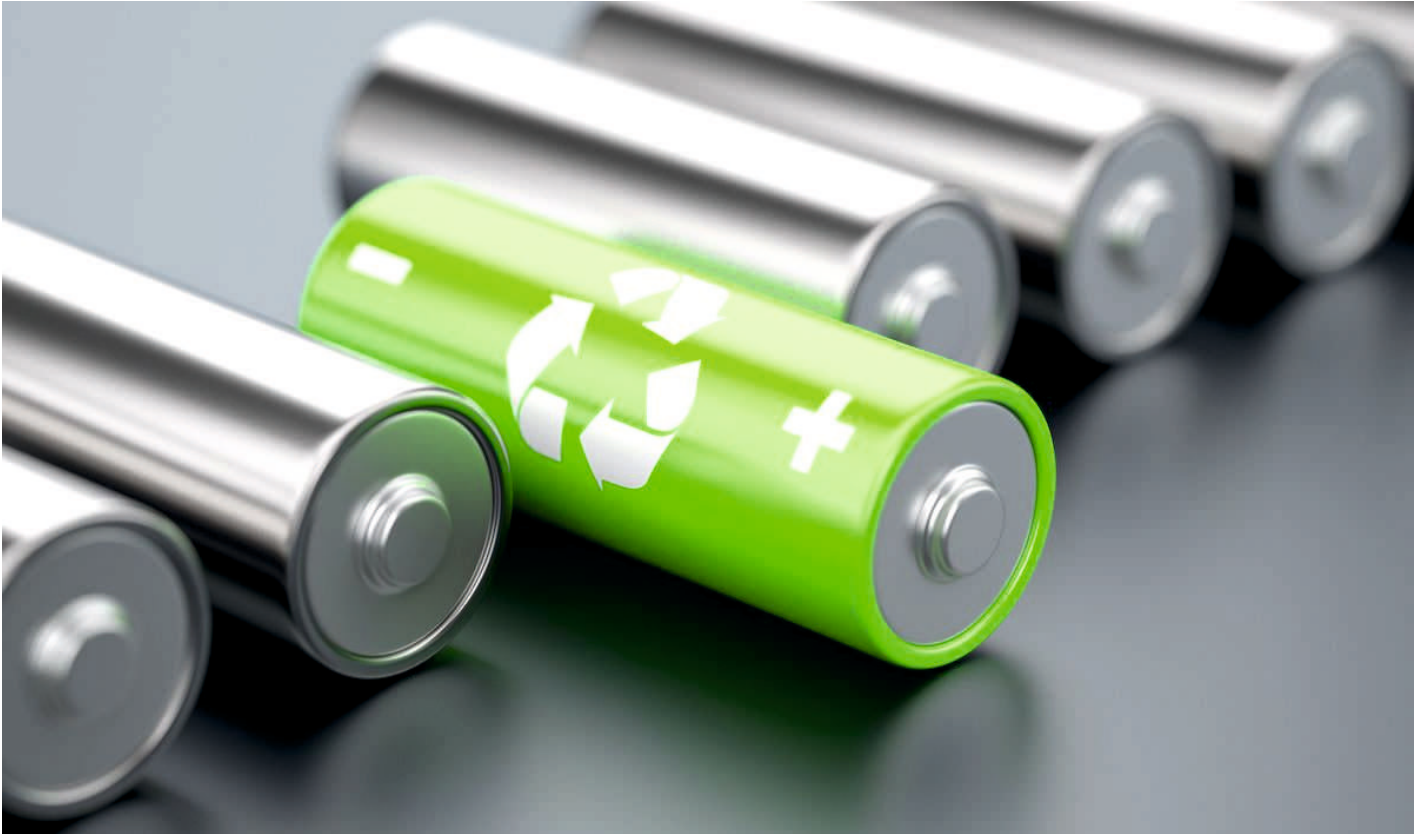
Inaugurating the program, Sumit Joshi, CEO & MD of Signify, South Asia said, "At Signify, our vision is to unlock the extraordinary potential of light to create brighter lives and a better world. Our EcoLink Cares CSR program is very special, as it aims to gift the light of education to visually impaired students.

We are thankful to Samarthanam Trust for supporting us in this cause and we hope to make a positive impact in the lives of these children."

Commenting on the initiative, Mahantesh. G.K, Founder Managing Trustee, Samarthanam Trust for the Disabled said, "Samarthanam Trust has been a pioneer in empowering people with disabilities since 1997 and it gives us immense pleasure to associate with Signify India in this new initiative. Our constant endeavor is to reach out to these visually impaired students to not only educate them but also empower them to live a life of dignity."

AUTHOR : SIGNIFY INNOVATIONS INDIA LIMITED

# Government notifies Battery Waste Management Rules, 2022



**T**he Ministry of Environment, Forest and Climate Change, Government of India published the Battery Waste Management Rules, 2022 on 24th August, 2022 to ensure environmentally sound management of waste batteries.

Notification of these rules is a transformative step towards implementation of the announcement made by Prime Minister Shri Narendra Modi in his address to the Nation on Independence Day on 15th August, 2021 to promote Circular Economy in full earnest.

These new rules will replace Batteries (Management and Handling) Rules, 2001 and cover all types of batteries, such as Electric Vehicle batteries,

portable batteries, automotive batteries and industrial batteries.

These rules function based on the concept of Extended Producer Responsibility (EPR) where the producers (including importers) of batteries are responsible for collection and recycling/refurbishment of waste batteries and use of recovered materials from wastes into new batteries.

EPR mandates that all waste batteries need to be collected and sent for recycling/refurbishment, and it prohibits disposal in landfills and incineration. To meet the EPR obligations, producers may engage themselves or authorise any other entity for collection, recycling or refurbishment of waste batteries. The ministry will set up a mechanism and

centralized online portal for exchange of EPR certificates between producers and recyclers/refurbishers to fulfil the obligations of producers.

The Battery Waste Management Rules promote setting up of new industries and entrepreneurship in collection and recycling/refurbishment of waste batteries and mandate a minimum percentage of recovery of materials from waste batteries in a move that is aimed to bring new technologies and investment in recycling and refurbishment industry and create new business opportunities. Prescribing the use of certain amount of recycled materials in making of new batteries will reduce the dependency on new raw materials and save natural resources.



**TABLE**

| S.No. | Type of Battery  | Recovery target for the year in percentage |         |         |
|-------|------------------|--|---------|---------|
|       |                  | 2024-25                                    | 2025-26 | 2026-27 |
| 1.    | Portable         | 70   | 80      | 90      |
| 2.    | Automotive       | 55   | 60      | 60      |
| 3.    | Industrial       | 55   | 60      | 60      |
| 4.    | Electric Vehicle | 70   | 80      | 90      |

**Note:** Maximum recovery targets is subject to the percentage of non-recoverable hazardous material content in the Battery. it would mean the reduction of recovery target by the same percentage of the hazardous material present in Waste Battery.

Online registration and reporting, auditing, and committee for monitoring the implementation of rules and to take measures required for removal of difficulties are some of the salient features of these rules that ensure effective implementation and compliance.

On the principle of Polluter Pays Principle, environmental compensation will be imposed for non-fulfilment of Extended Producer Responsibility targets, responsibilities and obligations set out in the rules. The funds collected under environmental compensation shall be utilised in collection and refurbishing or recycling of uncollected and non-recycled waste batteries.

Some excerpts from the published Battery Waste Management Rules, 2022 are provided below.

These rules apply to Producer, dealer, consumer, entities involved in collection, segregation, transportation, refurbishment and recycling of Waste Battery. All types of batteries regardless of chemistry, shape, volume, weight, material composition and use are included.

These rules do not apply to Battery used in equipment connected with the protection of the essential security interests including arms, ammunitions, war material and those intended

specifically for military purposes and equipment designed to be sent into space.

'Producer' as per these rules means an entity who engages in manufacture and sale of Battery including refurbished Battery, including in equipment, under its own brand or sale of Battery including refurbished Battery, including in equipment, under its own brand produced by other manufacturers or suppliers or import of Battery as well as equipment containing Battery.

Producers shall have the obligation of Extended Producer Responsibility for the Battery that they introduce in the market to ensure the attainment of the recycling or refurbishing obligations and need to meet the collection and recycling and/or refurbishment targets for Battery made available in the market.

Waste Battery collected by the Producer should be sent for recycling or refurbishing and should not be sent for landfilling or incineration. All Producers shall have to register through the online centralised portal and a certificate of registration shall be issued to them. Producer will be required to file for renewal of registration sixty days before expiry.

Producers will be required to inform the Central Pollution Control Board of any changes to the information contained in

the Extended Producer Responsibility Registration and of any permanent cessation as regards to the making available on the market of the Battery referred to in the Extended Producer Responsibility Registration.

Producer will need to provide Extended Producer Responsibility plan to Central Pollution Control Board by 30th June of every year for the Battery manufactured in the preceding financial year which shall contain information on the quantity, weight of Battery along with the dry weight of Battery materials through the centralised portal.

In order to develop a separate waste stream for collection of Waste Battery for fulfilling Extended Producer Responsibility obligations, the Producer, may operate schemes such as deposit refund system or buy back or any other model.

In order to meet the obligations of Extended Producer Responsibility, the Producer may engage itself or authorise any other entity for collection, recycling or refurbishment of Waste Battery. However, the obligations of meeting the Extended Producer Responsibility targets shall remain with the Producer. The Producers will be required to file annual returns regarding the Waste Battery collected and recycled or refurbished towards fulfilling obligations under Extended Producer



Responsibility with the Central Pollution Control Board and concerned State Pollution Control Board by 30th June of the next financial year. The details of the registered recyclers from whom the Extended Producer Responsibility certificates have been procured also need to be provided.

Producers will also be responsible to adhere to prohibitions and labelling requirements as prescribed and will need to ensure safe handling of Battery or Waste Battery such that no damage to human health and environment occurs.

The Battery Waste Management Rules, 2022 also defines action on violations and imposition of Environmental Compensation to be levied for several activities based on polluter pays principle. It shall penalize entities carrying out activities without registration as mandated under these rules or those that provide false information or wilfully conceal material facts or submit forged/manipulated documents or those entities that are engaged in collection, segregation, and treatment and do not follow sound handling of Waste Batteries

Environmental Compensation shall also be levied by Central Pollution Control Board on Producer operating with respect to non-fulfilment of their Extended Producer Responsibility targets, responsibilities and obligations set out in these rules.

The payment of Environmental Compensation shall not absolve Producer of Extended Producer Responsibility obligation set out under these rules. The unfulfilled Extended Producer Responsibility obligation for a particular year will be carried forward to the next year for a period of three years and in case the shortfall of Extended Producer Responsibility obligation is addressed within subsequent years within three years, 75% of the Environmental Compensation levied shall be returned to the Producer within one year of levying of Environmental Compensation, 60% within two years and 40% within 3 years

After completion of three years after Environmental Compensation getting due, the entire Environmental Compensation amount shall be forfeited, this arrangement shall allow for

collection and refurbishment or recycling of Waste Battery by the concerned entities in later years as well.

The funds collected under Environmental Compensation shall be kept in a separate escrow account by Central Pollution Control Board or State Pollution Control Board and be utilised in collection and refurbishing or recycling of uncollected and nonrecycled or non-refurbished Waste Battery against which the Environmental Compensation is imposed. Modalities for utilisation of the funds for Waste Battery management would be recommended by the Committee for Implementation for the approval of Central Government.

Non-fulfilment of obligations set out under these guidelines will attract penal actions under the provisions of section 15 of the Environment (Protection) Act, 1986.

**AUTHOR : SANTOSH AGNIHOTRI,  
CHAIRPERSON, ELCOMA TECHNICAL  
COMMITTEE AND GENERAL  
MANAGER- QUALITY & TECHNICAL,  
ORIENT ELECTRIC LIMITED**



# Lighting Pollution and Glare in Office Spaces

Light is a daily necessity of our lives. Since the introduction of the light bulb in 1879. The technology of Light has greatly improved thus illuminating our night sky. However, the use of excessive light has only caused side effects. These effects include glare and light pollution.

Glare is a visual sensation caused by excessive and uncontrolled brightness in the field of view. It is produced by brightness in the visual field that is so much greater than the brightness to which the eyes can handle. Glare ends up limiting a person's ability to distinguish details and objects. Older people are usually more sensitive to glare due to ageing characteristics of the eye.

There are two forms of glare. **Disability glare** is the reduction in visibility caused by intense light sources in the field of view while **Discomfort glare** is the discomfort of annoyance or pain induced by overly bright source.

Disability glare and discomfort glare can

be caused by two types of glare, they are direct and indirect glare. Direct glare is the result of high brightness from a light source in the field of vision. For example, the sun in front of a person's eye is direct glare. Whereas indirect glare is the result of light that is reflected in the eye. For example, light from the sun being reflected from a surface to a person field of view is known as indirect glare.

## Glare light pollution

Light pollution is the excessive use of artificial outdoor lighting. Reasons for light pollution include glare light, skyglow, clutter and light trespass. Light Pollution disrupts the circadian rhythm, thus affecting the environment, energy resources, wildlife and humans too.

Circadian rhythm is a natural physiological process of living beings. For us, humans it helps regulate our brain and cycle between sleepiness and alertness. It works by receiving information from our eyes to know when it is day or night.

As humans we are regulated by circadian rhythms. These rhythms respond to light and dark. Melatonin a hormone that regulates the sleep cycle is affected by light pollution. This hormone is activated through darkness thus light pollution only reduces the hormone's deficiency. This results in sleeping disorders.

## Light Pollution in the Workplace and UGR

Correct lighting design is an often underestimated component within organizations and requires more attention. It is well known that being blinded in road traffic is dangerous and this also applies to incorrect lighting in the office. The productivity and well-being of employees in the workplace is strongly influenced by light. Psychological glare leads to reduced performance, increased fatigue and has a negative effect on the well-being of employees.

Due to the intense concentration that's required of office workers, and to the

$$UGR = 8 \log_{10} \left( \frac{0,25}{L_B} \sum \frac{L^2 \omega}{p^2} \right)$$

where

- $L_B$  is the background luminance, calculated as  $E_{ind} \cdot \pi^{-1}$ , in which  $E_{ind}$  is the vertical indirect illuminance at the observer's eye in  $cd \cdot m^{-2}$ ,
- $L$  is the luminance of the luminous parts of each luminaire in the direction of the observer's eye in  $cd \cdot m^{-2}$ ,
- $\omega$  is the solid angle in steradian of the luminous parts of each luminaire at the observer's eye,
- $p$  is the Guth position index for each individual luminaire which relates to its displacement from the line of sight.

| Task or activity                                       | UGR |
|--|-----|
| Automatic processing (industrial activities)           | 28  |
| Circulation areas and corridors (educational premises) | 25  |
| Entrance halls (general areas)                         | 22  |
| Sales area (retail premises)                           | 22  |
| Writing, typing, reading, data processing (offices)    | 19  |
| Conference and meeting rooms (offices)                 | 19  |
| Technical drawing (offices)                            | 16  |
| Color inspection (industrial activities)               | 16  |

fact that they typically do their work in front of computer screens, providing the highest level of visual comfort is crucial. Incorrect lighting can lead to eye fatigue, headaches and to neck and shoulder pain. It can also have a negative impact on performance, mood, and motivation, and boost the amount of sick leave employees take.

The Unified Glare Rating was developed by the International Commission on Illumination (CIE). It is a method or empirical model that aims to standardize the assessment of indoor glare worldwide. The lower the UGR value, the lower the psychological glare. The UGR formula is a further development of the formula for calculating the CIE Glare Index. The empirical model Glare Rating (GR), which is described in CIE document 112-1994, is used for glare outside buildings (stadiums, street lighting).

The UGR method it does not measure the glare effect of a single luminaire, but that of an entire lighting system. The values are classified on a scale from 10 (= no glare) to 30 (= very high glare). The lower the UGR value, the lower is the psychological glare.

Other or previous methods could only

determine the glare caused by a single luminaire. In the UGR method, the degree of glare UGR can be empirically calculated by several light sources (lamps) of a lighting system for a defined observer position.

#### Preventing and reducing glare light in the office

- Bright but low Glare - Use of appropriate LED panels, downlighters and linear lights to create bright low glare lighting effect can help create a better contrasting illumination in the office space. Fixtures with deep reflectors and prismatic diffusers are recommended
- Use of lights having high CRI and correct CCT (e.g. 4000K) contribute to good visuals even with lower illumination levels
- Efficient use of Direct-Indirect task lights - Introducing an Up-light or Indirect-Light component that projects light onto the ceiling will decrease the contrast between the fittings and the background and this in turn will help reduce the UGR.
- Use of wired or wireless automation to control lights coupled with motion/daylight sensors helps with effective utilization of lights with

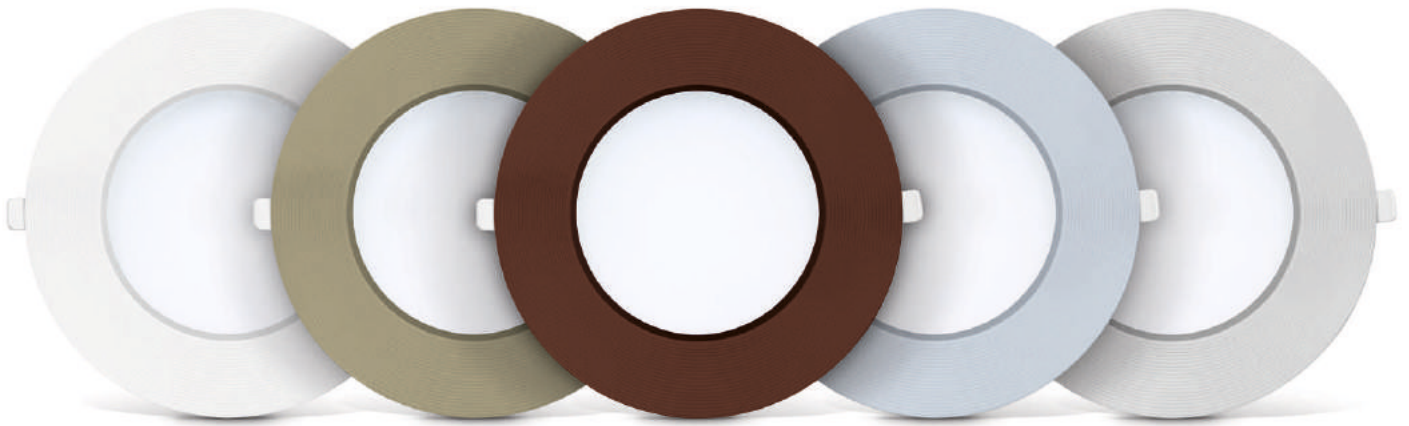
respect to occupancy or day light harvesting and also makes the office space more 'greener'

- Efficient DIALUX design coupled with understanding of the seating layout can help achieve optimal lighting levels and uniformity
- Filter and diffuse light - Direct light causes the most glare. Diffuse light with lampshades and use curtains on windows to reduce glare.
- Work surfaces - Ensure work surfaces are dull instead of shiny as reflected light reflects more off shiny surfaces which results in indirect glare
- Anti-glare coatings can help in reducing glare
- Install adjustable light so workers can adjust the light level
- Use automatic brightness on computers and phones
- Desk arrangement - For example instead of having to face a window, adjust the desk perpendicular to the window to reduce glare.

**AUTHOR : HERSHUL VIRENDRA, AGM,  
PRODUCT MANAGEMENT, LEDVANCE  
PRIVATE LIMITED**



# Signify expands 3D-printed lighting range in India



**S**ignify, the world leader in lighting, has expanded its 3D-printed lighting range with the launch of the Philips GreenPerform Perfectfit downlight, India's first 3D-printed downlight for professional customers. This unique product is available in six size options to fit any existing ceiling cut-out, thereby offering a perfect fit and eliminating the need for any additional accessories or expensive renovation.

The new downlight is more sustainable and has a lower carbon footprint compared to traditional downlights, as it is manufactured with recyclable polycarbonate and is also more energy efficient with a 100 lumen/watt efficacy. Customers can also recycle these luminaires at the end of their lifespan,

which feeds into the circular economy.

Commenting on the launch, Sumit Joshi, CEO & MD, Signify South Asia said: "Our Philips GreenPerform Perfectfit downlight offers a sustainable and convenient option for professional customers looking to either replace their existing downlights or to install new ones. Our 3D-printed range of lighting provides customers the flexibility to choose from a wide range of sizes and color options to suit their unique requirements, while also enabling them to lower their carbon footprint with a sustainably-manufactured luminaire that can also be recycled later."

The Philips GreenPerform Perfectfit downlight is available in three light output options (900, 1400 and 1900 lumens) and five premium metallic color

options to match an existing building's interiors in various professional applications such as retail, office and hospitality.

Professional customers can view the range on <https://www.tailored.lighting.philips.com/en/in/>, where they can also customize their product by choosing the desired size, lighting color temperature, lumen and luminaire color. They can then download the specification sheet to share it with a Philips lighting partner for placing their order.

Signify also offers a wide range of 3D-printed luminaires with innovative designs and an infinite combination of colors, textures and shapes for a truly unique and bespoke product. These are available on the same website.

# Orient Launches Joylite series of Festive Lights

**O**rient Electric has launched a wide range of LED festive lights under JOYLITE Series, which contains lights that can be used to decorate homes and brighten up celebrations in various ways.

As Indian market is all flooded with Chinese decorative lights Orient Electric has taken a lead in this category and created a wide range of BIS certified festive lights. This range is fully Made in India and Orient provides 6 months

warranty on this range of products.

The JOYLITE Festive range consists of

- **Curtain Lights** – Joylite Star, Joylite Diya, Joylite Mannat Balls
- **String Lights** – Joylite Golden Toran, Joylite Kuber yantra – Ganeshji, Joylite Kuber yantra – Swastik, Joylite Crystal
- **Fairy Lights** – Joylite Rosary, Joylite Pixel

- **Rope Light** – Joylite Rope Light 120 LED

Some of these lights also have a controller attached to them, which sets these lights to different frequencies and helps in making your space even more attractive. All products in this range are high quality and ensure high brightness with very low power consumption. Ideal applications for this range of products is for decoration during parties, various celebrations, festivals, weddings etc.



## INDUSTRY **NEWS**

# Appointment of New Members

We welcome following members to ELCOMA family who have been appointed recently

1. Dewcon Industries, Village Kirpalpur, Tehsil Naagarh, Distt. Solan, Himachal Pradesh-174101  
Contact Person: Mr. Mukesh Kumar Kohli, CEO, They are manufacturers of LED drivers.
2. Sahasra Semiconductors Pvt. Ltd, Plot No. 33, Pocket 1, Jasola Management Insititure, South Delhi, Delhi-110076  
Contact Person: Amrit Lal Manwani, CMD, They are manufacturers of LED components
3. Chenfeng Tech Private Limited, Plot no. 21, ECOTECH-1, Extension-1, Greater Noida, GB Nagar, UP  
Contact Person: Mr. James Huang, GM, They are manufacturers of LED components, Caps, & Ballasts
4. Akarui Green Energy Solutions, 48/3, 1st D, Main road, 1st Block, Koramangala, Bangalore-560034  
Contact Person: Mr. Ajay Gupta, Partner, They are manufacturers of LED & LED luminaires
5. Radhika Opto Electronics Pvt. Ltd, 223, Adhyaru Industrial Estate, Sunmil Compound, Lower Parel( W), Mumbai- 13  
Contact Person: Mr. Amit Khandelwal, Director, They are manufacturers of LED components, LED luminaires & LED
6. Fluxlite NIMS Pvt. Ltd, Plot No. G976-979,979 B,C,D,G-986 TO G991, Sitapura Industrial Area, Ph-3, Jaipur-302022  
Contact Person: Prof. ( Dr.) Balvir S .Tomar, CMD, They are manufacturers of LED components, LED luminaires & LED



# 30 BIS Raids against Non-Compliant Products this year

Ministry of Electronics & Information Technology (MeitY) notified "Electronics and Information Technology Goods (Requirement for Compulsory Registration) Order, 2012" on 03 October 2012. Initially this was for fifteen categories of electronics items and more categories were subsequently added. A wide range of electronic items, many of which are daily use products, are covered under this order. This list covers mobile phones, scanners, amplifiers, set top boxes, laptops, printers, luminaries, LED flood lights, lighting chains, televisions, music systems, digital cameras and so on. The complete list is available in public domain and can be accessed at <https://www.crsbis.in/BIS/products-bis.do>

BIS has been receiving a large number of complaints related to above referred compulsory registration scheme (CRS). Complaints pertain to following two types: Misuse of registration mark, i.e., applying the mark without authorisation; and violation of compulsory registration order, i.e., production /sale / display for

sale / distribution of these products without BIS Registration Mark. While 41 complaints are still under investigation, BIS Branch Offices have carried out 30 Search and Seizure operations across states of Gujarat, Delhi, Maharashtra, Tamilnadu, Rajasthan, Punjab, Haryana and Madhya Pradesh since January this year. Subsequent to successful Search & Seizure operation, legal action for violation of BIS Act, 2016 are also being launched against the offenders.

If you come across violation of BIS Act, 2016, complaint may be lodged with BIS using BIS CARE Mobile App or through our web portal, link of which is as follows:

<https://www.bis.gov.in/index.php/consumer-overview/consumer-overviews/online-complaint-registration/>

BIS follows a well-established complaint redressal procedure. Complaints are recorded centrally at Complaints Management and Enforcement Department (CMED). Complaints can be made both offline and online. Online complaint can be

made through mobile app BIS CARE or by use of Consumer Engagement Portal. On receipt of the complaint it is investigated and further actions are taken for its redressal.



**AUTHOR : BUREAU OF INDIAN STANDARDS, MINISTRY OF CONSUMER AFFAIRS, FOOD AND PUBLIC DISTRIBUTION**



## We value your feedback

We love to hear from you as IllumiNation consistently strives to make its content informative and interesting. Please share your feedback/thoughts/views via mail

**For subscription : [deepakkumar@elcomaindia.com](mailto:deepakkumar@elcomaindia.com)**

**For advertisement : [amalsengupta@elcomaindia.com](mailto:amalsengupta@elcomaindia.com)**

*You can also contact us at*  
**Electric Lamp and Component Manufacturers' Association of India**  
 122, 1st Floor, DLF Tower-A, Jasola District Centre, Jasola Vihar, New Delhi -110025  
 Tel: +91-11-41556644/46604947

# SUBSCRIPTION FOR ONE YEAR

## Just Fill-up and send for one year Subscription

Quarterly

### SUBSCRIPTION ORDER FORM

Magazine -INR 100.00 or USD 7.00 per copy

#### Normal Rates:

India - 4 issues for Rs. 300 (1 year's subscription) as against Rs. 400  
Overseas - 4 issues for 20.00 USD (1 year's subscription) as against USD 28.00  
Note : extra 18% GST applicable

Name of Organization : .....  
No of Copies required : ..... Issue start date.....Your email address : .....

#### Bank Details for Online Payment:

Name : Electric Lamp and Component Manufacturers' Association of India  
Bank Name : Bank of India  
Bank Address : M-78, Main Market, Road Number 10, Block M, Greater Kailash II, New Delhi 110048  
Account No. : 603710110001910, IFSC Code: BKID0006037, MICR Code: 110013009, Branch Code: 006037, Swift Code: BKIDINBBGK2

#### Details for Free Subscription

Name of Organization : .....  
Name of CEO : ..... Designation: .....  
Type of Business : .....  
Brief detail about your organization : .....  
Address : .....City : ....., Pin.....Country.....  
Phone:.....

#### Please send Free copy at Following address(s)

Name: ..... Designation: ..... Organization : .....

Postal Address : .....  
City : ..... Country : ..... Pin Code : ..... Mobile No : .....

Name: ..... Designation: ..... Organization : .....

Postal Address : .....  
City : ..... Country : ..... Pin Code : ..... Mobile No : .....

Name: ..... Designation: ..... Organization : .....

Postal Address : .....  
City : ..... Country : ..... Pin Code : ..... Mobile No : .....

Date : ..... Signature : .....

For subscription related queries, get in touch with  
us Mr. Deepak Kumar  
Electric Lamp and Component Manufacturer's  
Association of India (ELCOMA)  
122, 1st Floor, DLF Tower-A, Jasola District Centre,  
Jasola Vihar, New Delhi -110025  
Tel : +91-11-41556644/46604947 Email :  
deepakkumar@elcomaindia.com

ELCOMA Member's Directory  
for year 2022-2023 is now  
released. Interested stake  
holders may write for a free  
copy to  
deepakkumar@elcomaindia.com

ELCOMA  
Electric Lamp & Component Manufacturers  
Association of India  
MEMBERS' DIRECTORY 2022-23

LEDVANCE

LEDVANCE BIOLUX  
HUMAN CENTRIC LIGHTING  
LIGHTING THAT FOCUSES ON WELL-BEING

LEDVANCE PRIVATE LIMITED



# Power gone Light ON

## Presenting Orient Electric Emergency LED Lights



Lights will be automatically switched ON to Emergency mode during power cut

Automatically recharges when power is ON

### APPLICATIONS



SHOPS



PARKS



STREET VENDORS



RESIDENCES

MADE IN INDIA



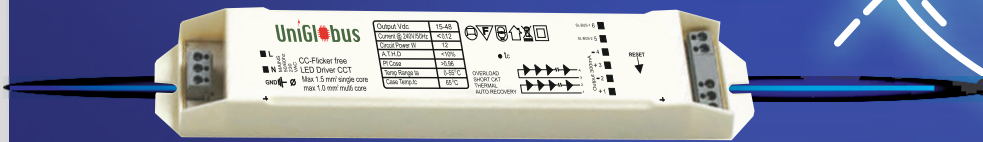
FANS • HOME APPLIANCES • LIGHTING • SWITCHGEAR

orient electric Smart Shop | [www.orientelectric.com](http://www.orientelectric.com) | Follow us on:

Orient helpline no.- 1800 103 7574\* (Toll free)

\*Applicable for India Only.

# Uniglobus the new universal name for power electronics



- LED Drivers
- BLDC Controller
- EV Charger

Some logics and fundamental truths always prove to be correct. Just as **UniGlobus LED Drivers** boost the overall performance, durability, cost-effectiveness and the efficiency of every LED light source. It is the heart that pumps momentum and keeps the light shining bright with optimum voltage, stipulated current levels and fully functional circuit.

## State of the Art R&D and Manufacturing facility

Maximize the output of cutting-edge LED technology with - Uniglobus LED Drivers... from the house of **POLYCARB**.

Visit us at: **Hall No. 4 Stall No. H51 | Pragati Maidan, New Delhi**  
**3<sup>rd</sup> - 4<sup>th</sup> November, 2022**

Head Office: Polycab House, 771, Pandit Satwalekar Marg, Mogul Lane, Mahim West, Maharashtra, Mumbai- 400016. ☎ Aniket Pathak :- 98222 25338

Factory: C/O Polycab Unit 3F Halol-Vadodara Rd Vill: Rampura, Ta: Halol Distt: Panchmahal Gujarat 389350

[www.uniglobus.in](http://www.uniglobus.in)



# SURYA

Smart Lighting

## Surya ke naye smart lights

# Sabko mood mein le aaye



- Warm to Cool Light
- Control Light Intensity
- Remote Controlled



## SURYA ROSHNI LIMITED

E-mail: [consumercare@surya.in](mailto:consumercare@surya.in) • [www.surya.co.in](http://www.surya.co.in) • Toll Free No.: 1800 102 5657 • Tel.: 011-47108000



surya



surya\_roshni



surya.roshni



surya-roshni