

inSync™

[MIND + BODY + LIGHT]

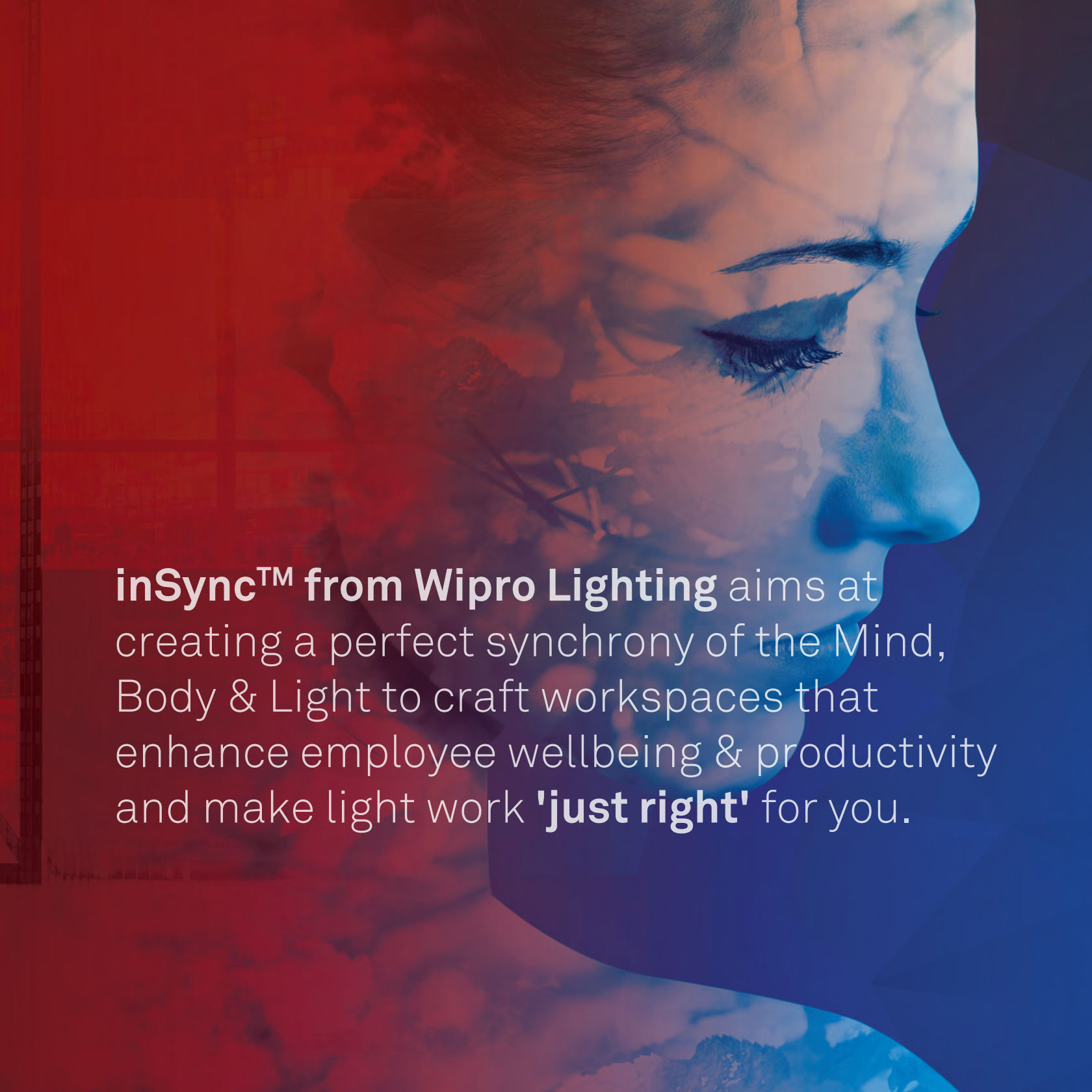


WIPRO LIGHTING



LIGHT IMPACTS

Workspaces today are witnessing the third millennium revolution. Work itself has undergone a transformation with so many of us spending most of our waking hours indoors at work. The need for agile and empowering workspaces is more imperative now than ever and lighting plays a vital role in entraining our circadian clocks with the natural day/light cycles.

A close-up, profile view of a woman's face, her eyes are closed. The image is overlaid with a color gradient that transitions from a deep red on the left to a bright blue on the right. The background is dark and textured, possibly representing a sky or a wall.

inSync™ from Wipro Lighting aims at creating a perfect synchrony of the Mind, Body & Light to craft workspaces that enhance employee wellbeing & productivity and make light work '**just right**' for you.

inSync™

[MIND + BODY + LIGHT]

Light is identified as a nutrient to human body just like food and water. Light is the most potent Zeitgeber; literally 'time-giver' to entrain the mammalian circadian system.



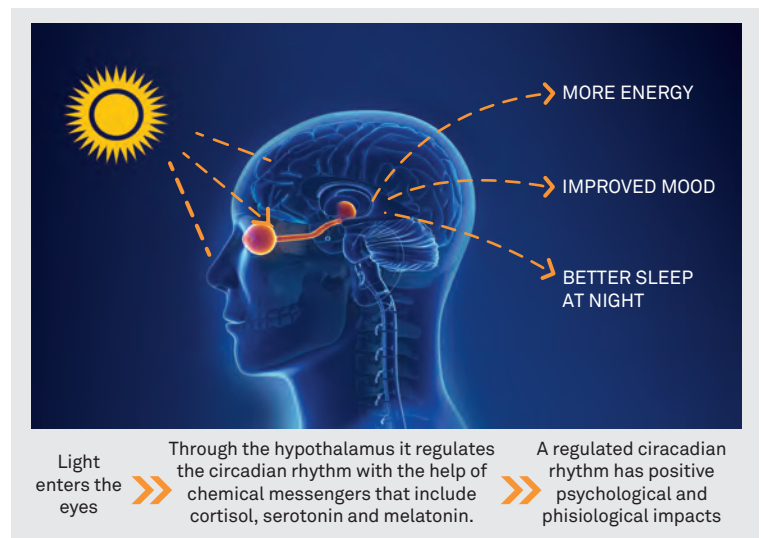
Circadian Rhythm

Rhythmicity is essential to life – from the beating of the heart for pumping oxygenated blood, to breathing of air by the lungs. Circadian rhythms are intimately involved in living systems at environmental, organismal, and cellular levels. Circadian rhythms, by definition, are physical, mental, and behavioural changes that follow a 24 hour cycle.



MIND + BODY + LIGHT

Light perception occurs in the retina by three different types of photoreceptors – Cones, rods and the newly discovered intrinsically photosensitive retinal ganglion cells (ipRGCs). These cells communicate with the master circadian pacemaker located in the suprachiasmatic nuclei (SCN) of the hypothalamus. The neuronal & hormonal activities thus generated by the SCN are responsible for entraining the circadian rhythm. This establishes a strong connection of Light with our Mind and Body.



Light stimulates hormones, Hormones impact wellbeing

High levels of energy throughout the day followed with a good night's sleep is the key to enhanced productivity, health and wellbeing.

The non-visual photoreceptors stimulated by light, control the hormonal balance, mainly the production of melatonin which regulates sleep patterns.

Cortisol

Cortisol is a steroid hormone that regulates many processes throughout the body, including metabolism, the immune response and also has a very important role in helping the body respond to stress.

It's concentrations reach a minimum in the evening and a peak near rising time. Exposure to bright & short wavelength light, close to 460nm (bluish-white light) is a simple, yet practical way to be better prepared for an active day.

Serotonin

Exposure to light produces Serotonin, a neurotransmitter that facilitates emotions including desire, body temperature, mood, sleep, appetite and metabolism. High intensity cool white light boosts the production of serotonin, promoting alertness and inducing a sense of wellbeing.

Melatonin

Melatonin allows for sleep and refreshes our body. In individuals with a well regulated circadian rhythm, as the day progresses, Serotonin is converted into Melatonin. Bright blue rich light can be an inhibiting factor in this process. Low intensity warm white light at the end of the day helps increase Melatonin levels and enhances a feeling of comfort and relaxation.

The Design Principle

inSync™ lighting works in harmony with the earth's natural lighting cycle and can be programmed to mimic the daylight –

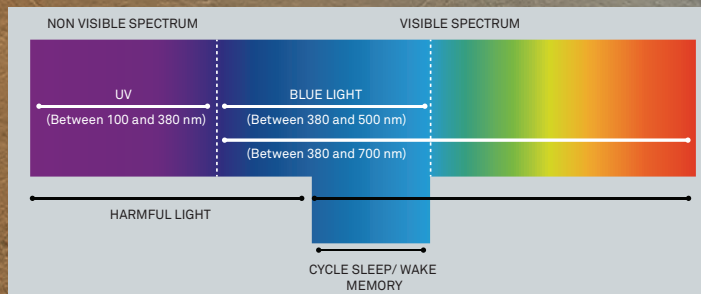
- Low light levels and low Correlated Colour Temperatures (CCT) in the early morning
- High light levels and high CCTs at midday
- Low light levels and low CCTs during evening
- Extremely low light levels and a low CCT at night



inSync™ in Action

The more artificial light mimics sunlight, the more pleasant and harmonious is the experience with it. inSync™ technology helps programme light closest to the visible spectrum of sunlight and can also modulate it during the course of the day.

Light CCT and Hormonal Changes



Higher light levels with cooler colour temperatures has a vitalising effect and promotes the release of serotonin and cortisol while suppressing melatonin at the same time. This stimulates energy and alertness, thus improving cognition and mental performance.

Lower light levels with warm colour temperatures have a more comfortable and relaxing effect. Warm-White light with a high percentage of amber promotes the release of melatonin, encouraging relaxation and regeneration.

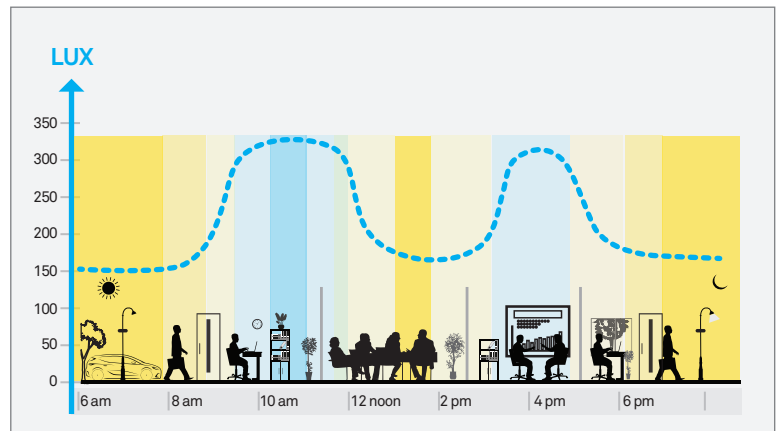
Proposed inSync™ Tuning

DAY SHIFTS

During daytime, bright light with high colour temperatures can provide a good start to the day, by suppressing the remaining melatonin in the body and increasing the cortisol levels.

The so-called 'post lunch dip' is a time of decreased alertness which occurs between 1 p.m. and 4 p.m. Higher alertness in the afternoon can therefore be induced by the using higher colour temperatures and higher light levels.

As work shifts end towards evenings, an eventual tune to warm comfortable lighting can help creating the right condition for melatonin production and prepare for a good night's sleep.

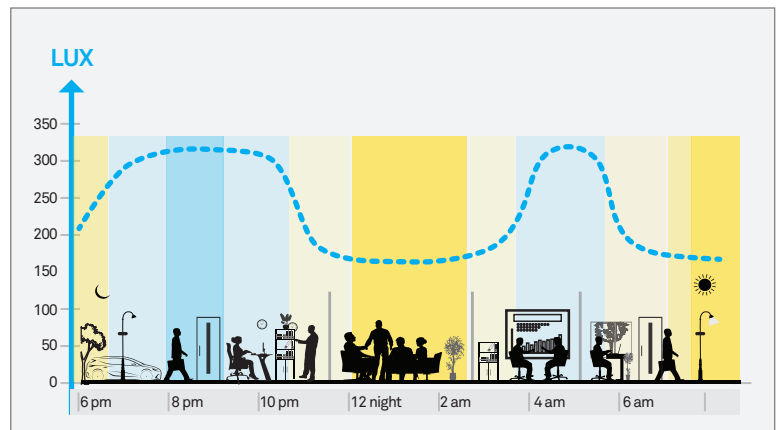


* Illustrative example. Proposed tuning would differ and depend upon application and age group of end user.

NIGHT SHIFTS

People working in night shifts on a regular basis work against their biological clock and rhythm. Bright light at night increases alertness during night-time and improves work efficiency. However, prolonged exposure to bluish white light can cause a severe disruption in the sleep cycles leading to stress, fatigue and other health issues.

Workspaces therefore need to have the right lighting conditions to balance efficient working along with correct sleep cycles. High color temperatures (bluish light) and high light levels are recommended in the beginning of the evening shift. Changing to lower levels and color temperatures at the end of the night shift leaves them in a comfortable state of mind for a relaxed sleep ahead.



* Illustrative example. Proposed tuning would differ and depend upon application and age group of end user.

inSync™ is for People

inSync™ Lighting is designed for wellbeing at workspaces and its design principle considers three kinds of impacts that light can have on employees – visual, emotional and biological.



● VISUAL IMPACT

- Creates a visually comfortable and glare free workspace
- Improves perceived lighting quality & attractiveness of workspaces
- Enhances emotional connect with the space

● EMOTIONAL IMPACT

- Promotes a balanced emotional state
- Improves resilience in stressful situations
- Reduces fatigue and anxiety

● BIOLOGICAL IMPACT

- Improves alertness, cognition and productivity
- Regulates circadian rhythm, sleep/wake cycles and body temperatures
- Improves immunity reducing absenteeism

Provides for an energetic and fresh start to days work

CCT : **5500 K** | INTENSITY : **100%**



Improves resilience in high stress periods or larger team interactions

CCT : **3500 K** | INTENSITY : **70%**



Comfortable lighting levels work best for high cognitive and thinking tasks

CCT : **5000 K** | INTENSITY : **80%**



Helps maintain high levels of focus during critical meetings and group discussions

CCT : **5500 K** | INTENSITY : **90%**

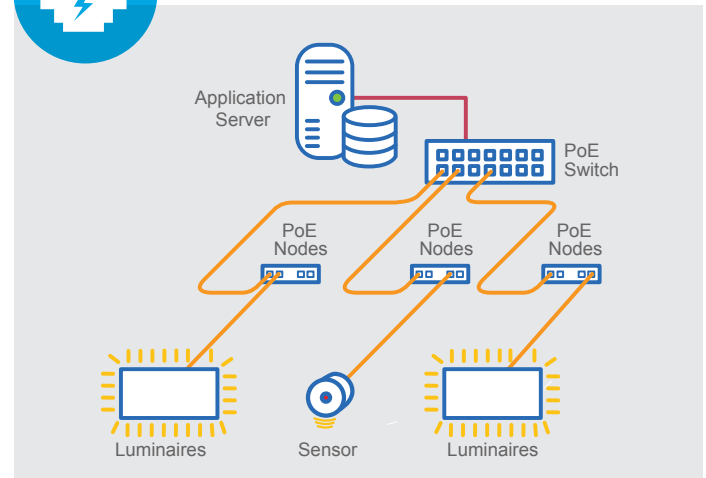


inSync™ Technology Platforms

inSync™ aims at building spaces that promote wellbeing & productivity. Technology must be an enabler not an inhibitor and hence inSync™ can be delivered over three different technologies.



PoE



Along with CCTV, IPTV, VoIP, Access points etc., bring the lighting system onto the LAN cable infrastructure, to enable a true IoT where things can really talk to each other without human interference.

How it Works

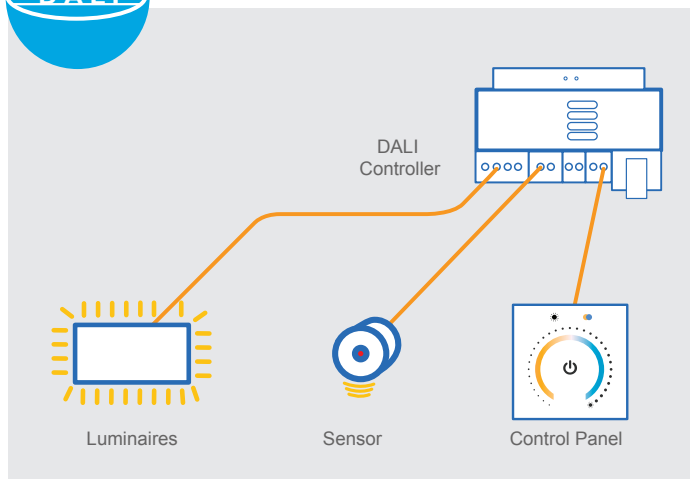
All LED lighting luminaires and sensors are connected to a PoE switch, which is the only AC powered device in the entire system. The switch sends the power as well as the control signals through the DC powered CAT6 cables, which eliminates multiple cables and makes installation and maintenance easier and faster, initially and over a long period of time.

Best Suited for

New constructions (or deep retrofits) where the entire cabling is being done afresh, as well as interconnections of multiple systems are required.



DALI



The most common technology for lighting controls in the past decade, that operates on a 4 wire system, providing great familiarity and comfort to installers and contractors.

How it Works

All LED lighting luminaires and sensors are connected to a DALI controller via 4 cables, of which 2 are for power and 2 are for controls. All the commands from the user are sent to the controller and then to the respective devices, ensuring reliable and fast communication. Integration with BMS and/or HVAC and smart features such as Human Centric Lighting can be provided with specialized design.

Best Suited for

New or old constructions alike, where efficient and convenient lighting control from a singular point is paramount. Simplicity is preferred over sophistication in such situations.



BLUETOOTH



The most convenient method of enabling lighting controls, as there are no control cables involved. This system allows for the easiest method of commissioning and operating the lighting system.

How it Works

The existing AC cables can be used to power the wireless modules which sit inconspicuously on the fixtures and connect to an authorized mobile device to provide fast and instant operation on lighting devices, as well as the most intuitive method of automating the on/off/dimming of the light luminaires.

Best Suited for

Existing offices that are undergoing a renovation; or spaces where installing new wiring is extremely difficult or impossible; or for new spaces where the highest priority is to have the easiest method of operating the lighting system.

inSync™ supports a wide range of products ranging from modular, linears to suspended and collaborative.



TZLED



AXEON LED



HALO



ORBIT LED



IMMACULATE LED



VERGE LED



OPUS LED



WAVE LED

WIPRO LIGHTING LEDEGE

Get the Edge with LED Lighting Solutions for Modern Workspaces through:

- Eco-sustainability, Design & innovation, Green technology and Efficient lighting solutions
- Capability to service multi-locational accounts
- Service Commitment - 19 branches and over 400 dedicated stockists
- Ease of contact through website
- Trustworthiness and reliability of Wipro



Scan the QR code to download the app

Other inSync™ Applications



HEALTHCARE



EDUCATION

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