CHOOSE A SMARTER FUTURE

Wipro Lighting
Outdoor Infrastructure of a city is the key for urban development. In the modern world, Information and communication technology plays the most critical role of making an area well connected, sustained and resilient. Internet of Things (IoT) Technology has helped us save time and simplify tasks in all walks of life.

WIPRO brings SMART OUTDOOR LIGHTING to your city where streetlights and poles perform many more functions than mere illumination.

A connected living where citizens and government participate together to make the place Intelligent, Smart and Safe. Very soon, LED lighting in your vicinity will become the principal infrastructure to provide smart technology and services for your city.
Functions of smart cities

- Wirelessly Connected
- Centrally Managed
- Traffic Monitoring

- Predictive Fault Detection
- Error Reporting
- Report Generation
- Energy Metering

- Improving Public Safety
- Optimized Energy Consumption
- Emergency Call
- EV Charger

- Motion Sensor Activation
- Dusk to Dawn Sensors
- Scheduled On/Off
- Speaker
Smart & Connected Outdoor Features

- Individual level control (ON/OFF/DIMMING)
- Proactive fault detection and correction with improved service quality
- Centralised Real Time Monitoring and Surveillance
- Performance Tracking and Report Analysis
- Optimised Energy Consumption
- Enhanced Security
- Long service support for critical projects like Smart City
- Options of Daylight / Vehicle motion based control / Environmental Sensors
- Versatile range of solutions scaling from single stand-alone systems to entire smart city
- Large no. of installations PAN India with individual or group controllers
- Technology agnostic solution

Wipro’s smart outdoors solutions are suitable for all outdoor applications like:

- Smart Campuses
- Smart Factories
- Townships
- Colonies
- Smart Cities
Smart Stand-alone Lighting System

Automatic ON/OFF Based on Astronomical Time Clock

The 6 step dimming in the Smart Streetlight can be programmed using Bluetooth App on any smartphone.

Function of Proposed Solution:

Smart Streetlight will turn light ON/OFF based on sunset & sunrise according to the astronomical time-clock.

Smart streetlight with programmable 6-step dimming options will dim lights to pre-defined levels.
Group Control & Monitoring System (GCMS)

An ingenious web-based central management and control software that helps to reduce energy, maintenance and repair costs. It gives easy access to control lighting fixtures via any web-browser.

Advantages: Scheduling, Fault Notifications, Improve efficiency, Improve quality and reduce downtime.

Application: City infrastructures such as
- Municipalities
- Industries
- Parking Garages
- Retail Malls
- Colleges and Business Campuses

Features

- Centralized Monitoring
- Proactive Maintenance
- Performance Tracking
- Energy Savings
- Schedule based ON/OFF
- Third party integration with API

Cloud/Server

GPRS/ GSM Panel

Energy Meter
Individual Streetlight Level Control & Monitoring System

CCMS is an innovative system that helps in offering unparalleled scalability and monitoring capabilities. Each luminaire behaves independently with its controller.

Application: Non-linear activity areas such as
- Pedestrian Walkways
- Parks
- Car Parking
- Warehouses

Features

- Wireless Technology
- Burn Hours Mapping
- Scalability
- Quick and Easy Installation
- Fault Monitoring and SMS Alert & Mail Service
- Options with addition of Sensors like Motion, Daylight and Environmental etc.
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Shuffle your world


Everything at once with Shuffle. A new integrated concept with unlimited opportunities to enhance the quality of life in society. As a Premium Partner, Wipro Lighting market Schréder’s smart city products and beyond lighting solutions.

Smart Lighting Solutions

- **360° LensoFlex®2 Street Lighting**
  - Lumen package range: from 1,600 to 4,500 lm*
  - Back-light control (optional)
  - Diffuser protector option available.

- **180° LensoFlex®2 Street Lighting**
  - Lumen package range: from 2,000 to 4,700 lm*
  - Back-light control (optional)

- **180° reflector Street Lighting**
  - Lumen package range: from 2,300 to 7,200 lm*
  - On-site inclination angle settings: -10°/+40°

Spot Street & Architectural Lighting

- Lumen package range: from 1,300 to 2,400 lm*

Beyond Lighting Solutions

- **WLAN**
  - Professional and secure wireless network
- **CCTV**
  - Professional camera network
- **EV Charger**
  - Professional charging station

The shuffle is much more than a lighting column. It is a lighting revolution that connects people with their environment and creates an added value for outdoor living spaces. Shuffle goes far beyond professional lighting by creating conditions that make people feel at home in public places.


Advantages:
- Low Maintenance
- Day and Night Safety & Comfort
- Good Environment for social interaction
- Single column structure lowers the carbon footprint of an installation

Connecting people to their social environment.

In partnership with Schréder Experts in Lightability™
### Available Technologies and their Comparison

<table>
<thead>
<tr>
<th>Parameters</th>
<th>ZigBee® Alliance</th>
<th>LoRa® Alliance</th>
<th>LoWPAN</th>
<th>Powerline Communication</th>
<th>NB-IoT</th>
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</thead>
<tbody>
<tr>
<td>Type of Communication</td>
<td>Wireless</td>
<td>Wireless</td>
<td>Wireless</td>
<td>Wired</td>
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<tr>
<td>Network Architecture</td>
<td>Mesh</td>
<td>Mesh / Star</td>
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<td>Star</td>
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<td>Network Topology</td>
<td>2.4 GHz</td>
<td>865-867 Mhz</td>
<td>2.4 GHz</td>
<td>2-30 MHz</td>
<td>700 - 900 MHz</td>
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<td>Segement Controller</td>
<td>Required</td>
<td>Not Required (optional)</td>
<td>Required</td>
<td>Required</td>
<td>Not Required</td>
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<tr>
<td>Communication Method</td>
<td>RF Mesh</td>
<td>LoRa Network</td>
<td>RF Mesh</td>
<td>Power Cables</td>
<td>NB-IoT Network</td>
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<tr>
<td>Server Connectivity</td>
<td>Via Segment Controller</td>
<td>LoRa Base Station</td>
<td>Via Segment Controller</td>
<td>Via Segment Controller</td>
<td>NB-IoT Base Station</td>
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<tr>
<td>Network Speed</td>
<td>250 KBPS</td>
<td>27 KBPS</td>
<td>250 KBPS</td>
<td>14 MBPS</td>
<td>250 KBPS</td>
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<tr>
<td>Ease of Deployment</td>
<td>Easy</td>
<td>Medium</td>
<td>Easy</td>
<td>Medium</td>
<td>Easy</td>
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<tr>
<td>Operating Expenses</td>
<td>Low</td>
<td>Medium</td>
<td>Low</td>
<td>Medium</td>
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<td></td>
<td>Can use existing network</td>
<td>Only LoRa Network can be used</td>
<td>Can use existing network</td>
<td>Can use existing network</td>
<td>Only NB-IoT Network can be used</td>
</tr>
<tr>
<td></td>
<td>Good for Small Network</td>
<td>Good for Medium Network</td>
<td>Future Proof as it works on IPv6.0</td>
<td>Good in Harsh Environmental Conditions</td>
<td>Future Proof as it uses NB-IoT Network</td>
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<tr>
<td></td>
<td>Needs multiple Segment Controller in dense areas with large high height objects</td>
<td>Needs dedicated LoRa network in the area</td>
<td>Devices are costly</td>
<td>Comissioning Support is more</td>
<td>High Operating Expenses for Network Network is slow and cannot be used for vehical movement based controls etc</td>
</tr>
</tbody>
</table>

*Comparison is based on data available in Public Domain and does not promote any technology.*