Intelligence to the n\textsuperscript{th} Degree

Close your eyes and imagine...

- A lighting control system with intelligence that is distributed throughout a building
- Lighting profiles that incorporate time-based control with occupancy, daylighting, and manual control
- A self-commissioning system that can utilize wireless connectivity between zones
- Remote status and control of a lighting system from anywhere in the world

Sensor Switch, the leader in occupancy sensor products and technology for lighting control, invites you to stop imagining and open your eyes to nLight!

BASICS

What is nLight?

nLight is a revolutionary system that cost-effectively integrates time-based lighting control with sensor-based lighting control.

How Does nLight Work?

By networking together our sensors, power packs, photocells, and wall switches, we’ve created a system with “distributed intelligence”. This enables nLight to provide local control of a building’s lighting system via stylish LCD “Gateway” devices and/or global control via web-based lighting management software called “SensorView”.

What is Distributed Intelligence?

Distributed Intelligence enables zones of nLight devices to self-commission and function independently, if necessary. Distributed Intelligence also eliminates the need for centrally hardwired equipment.
## BENEFITS

### How Does nLight Compare to Traditional Control Strategies?

<table>
<thead>
<tr>
<th>TRADITIONAL TOPOLOGIES</th>
<th>nLight</th>
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<tbody>
<tr>
<td><strong>Time-Based Control</strong></td>
<td>Lighting circuits are all routed through a relay panel that switches power ON and OFF based upon preset time schedules or astronomical clocks.</td>
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<tr>
<td><strong>Sensor-Based Control</strong></td>
<td>Relays that are integrated into sensors or stand-alone relay (power) packs control the power to individual lights or circuits based upon occupancy and/or daylight.</td>
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**nLight**

The nLight system eliminates the need for "layering" lighting control devices and their redundant hardware onto each other by incorporating time-based control with sensor-based control.

nLight uses the relays that are present in the sensors and power packs to switch local lighting circuits.

Together, all nLight devices work as a network that can be controlled locally via an LCD “Gateway” device and/or remotely using “SensorView” software, which provides programmable schedules and profiles.

### What Advantages Does nLight Provide a Contractor?

- Lower overall equipment cost and maintenance
- Simple installation; devices are automatically discovered and grouped into zones
- Flexible architecture makes future expansions plug-and-play

### What Advantages Does nLight Provide the End User?

- Maximizes the operational and energy efficiency of a building’s lighting system
- Ability to easily change building lighting status in order to implement load shedding or safety overrides
- Eliminates need for compromises between occupant convenience and energy savings
- Enables remote system upgrades
**SYSTEM ARCHITECTURE**

**ZONE VIEW**
- Low Voltage Sensors and WallPods™ connect via daisy-chained CAT-5 cabling to a Power Pack (See Zone 3)
- Power Pack uplinks to closest Bridge on floor
- Line Voltage Sensors and WallPods™ (including Wall Switch Decorators) can also connect directly to Bridge (See Zone 4)

**FLOOR VIEW**
- Zones connect into Bridges via CAT-5 cabling
- Bridges and Gateways interconnect via cabling or wireless meshed network (ZigBee protocol)
- Gateways uplink to any Ethernet Local Area Network (LAN)
• Gateways on each floor interconnect via Ethernet Local Area Network (LAN)
• SensorView software resides on one host computer connected to LAN
• SensorView web application accessible via any web browser with network access
The best way to show the power of nLight is to consider all the combinations of settings and operational modes that can be configured for a zone or group of zones. Adding a schedule and priority to these configurations enables an unlimited number of potential lighting control profiles to be created.

### SETTINGS

- Occupancy Sensor Time Delays
- Switch Operation (Manual/Automatic On)
- Enable/Disable Microphonics™
- Custom Device Names
- Photocell Setup & Control
- 2-Pole Device Settings
- Dimming Limits
- 100 Hour Burn-in Control
- Remote Firmware Upgrades

### MODES

- Override Lights ON
- Override Lights OFF
- Scheduled ON
- Scheduled OFF
- Auto-ON with Occupancy
- Auto-OFF with Vacancy
- Manual ON via Local Switch
- Manual OFF via Local Switch
- Auto-Dim via Photocell
- Auto-ON via Photocell
- Auto-OFF via Photocell
- Auto-ON with Astronomical Clock
- Auto-OFF with Astronomical Clock
- Increase Dim Level
- Decrease Dim Level

### SCHEDULING FEATURES

- Ability to schedule (date/hour/minute) changes to any setting or control mode
- Convenient recurrence patterns: daily, weekly, weekdays, weekends, etc.
- Preset and Custom Device Groups enable quick programming of zones
- Automatic Daylight Savings Adjustment

### SENSORVIEW

The nLight SensorView software is used to create these lighting profiles as well as to view remote status monitoring information about the system. This browser based application provides complete system administration in an easy to use tabbed graphical interface.

### STATUS

Real-Time status values available via SensorView:

- Occupancy Status
- Remaining Time Delay
- Photocell Light Reading
- LED Status
- Current Dim Level
- Relay state(s)
SAMPLE LIGHTING PROFILES

**Lobby**
- Auto-ON with first occupant
- Permanent ON (no OFFs due to Vacancy) during working hours
- Photocell overrides lights OFF during peak daylight
- Return to occupancy-based control during non-working hours

**Private Office**
- Custom time delays based on occupant requirements
- Lumen maintenance through ceiling dimming photosensor
- User-selected dim levels via WallPod™

**Open Office**
- Requires first morning occupant to initiate Lights ON
- Permanent ON status during working hours
- Standard occupancy control during evening non-working hours
- Short time delays during late night guard walk through

**Restroom**
- 2-Pole sensor controls light and fan separately
- Light turns OFF shortly after vacancy; fan runs for extended time
- Varying time delay periods for working vs. non-working hours in order to maintain lamp life while maximizing energy savings

**Retail Floor**
- Occupancy control during early morning stocking hours
- Lights are on Time-of-Day/Day-of-Week schedule during store hours
- Occupancy control during evening cleaning hours
- Occupancy sensors automatically accommodate special late night sales without reprogramming system

**Classroom**
- System accommodates inboard/outboard switching (A/B)
- Stepped dimming or continuous dimming with local set-point control
- Dual Technology (PDT) during class hours, single technology (PIR) and shortened time delays during cleaning periods

**Parking Garage / Lot**
- Astronomical dawn and dusk times available
- Photocell override during daylight hours
- All lights extinguished during times when garage is closed
SYSTEM COMPONENTS

**Sensors**
- Available in Ceiling Mount, Wide View, and Decorator Switch Enclosures
- Integrated RJ-45 ports
- Remotely Controllable and Upgradable
- Available with or without up to two Line Voltage switching relays

**Power Pack**
- Powers Low Voltage Sensors and switches Line Voltage loads
- Status LED and push button
- Integrated RJ-45 ports enable quick connection to sensors and bridges

**WallPods**
- Single gang decorator style devices that provide local ON/OFF and/or Dimming control of a lighting zone
- Available with or without Line Voltage switching relay and/or Dimming outputs
- Buttonless touch controls and integrated RJ-45 ports

**Bridge**
- Routes information between an upstream Gateway and up to 8 downstream sensor zones
- 4 or 8 port (RJ-45) device that mounts to a 4" x 4" junction box
- Optional wireless interconnectivity with other Bridges and Gateways (using ZigBee protocol)

**Gateway**
- Provides both the local control point and network access point for downstream zones
- Stylish two gang device with 4 RJ-45 ports (for connection to Ethernet LAN, Bridges, and local lighting zones)
- Backlit LCD screen with buttonless touch controls of menu-driven interface
- Optional wireless interconnectivity with Bridges (using ZigBee protocol)

**SensorView Software**
- Provides global control of lighting system
- Shows detailed screens with real-time lighting and occupancy status
- Enables remote programming of sensors
- Creates scheduled lighting control profiles
- Compiles event logs, device inventory, and lighting runtime reports