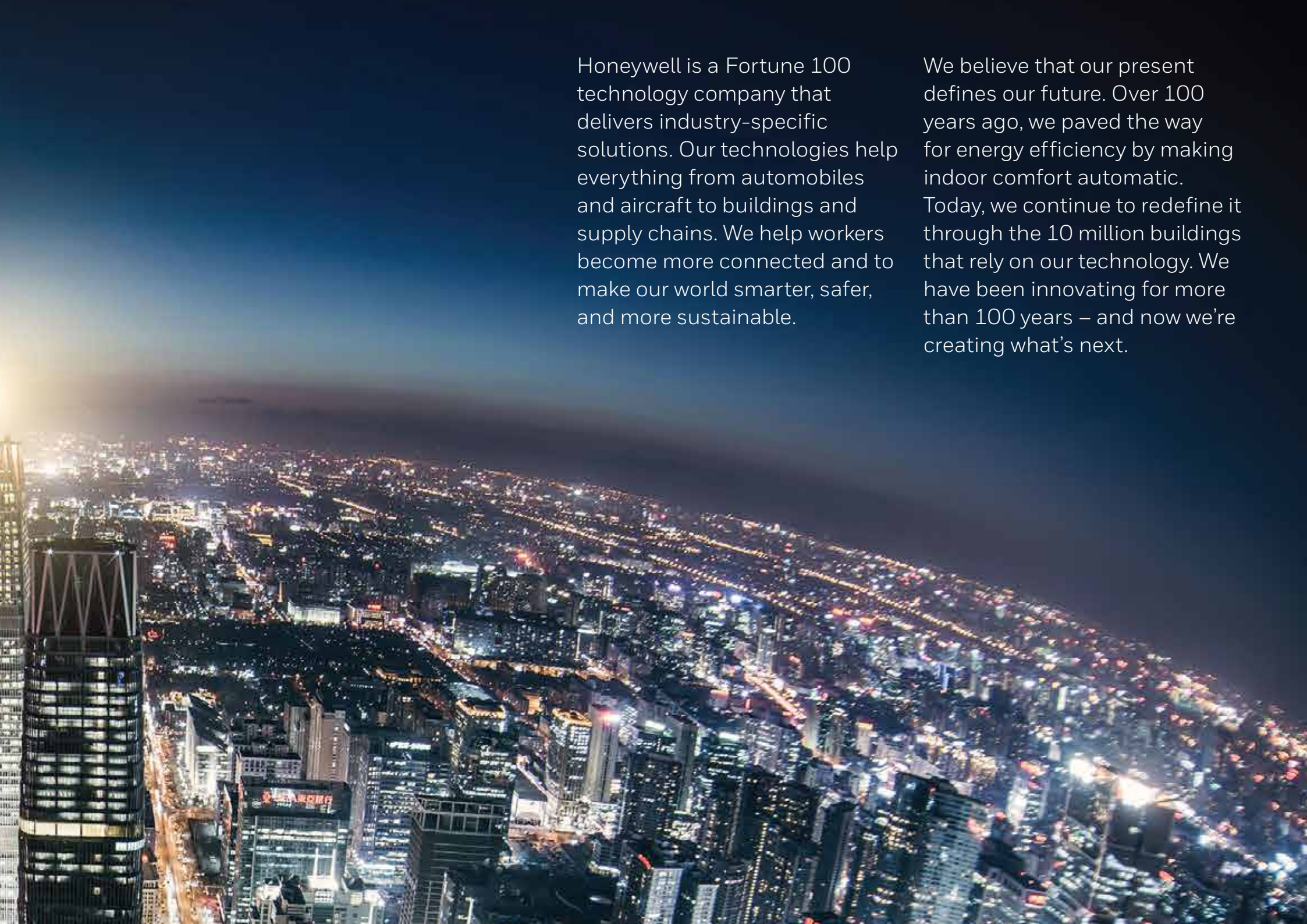
WIRELESS LIGHTING MANAGEMENT SOLUTION

An IoT Based Lighting Control Solution

Honeywell

Honeywell is a Fortune 100 technology company that delivers industry-specific solutions. Our technologies help everything from automobiles and aircraft to buildings and supply chains. We help workers become more connected and to make our world smarter, safer, and more sustainable.

We believe that our present defines our future. Over 100 years ago, we paved the way for energy efficiency by making indoor comfort automatic. Today, we continue to redefine it through the 10 million buildings that rely on our technology. We have been innovating for more than 100 years – and now we're creating what's next.



Offices today value resource productivity, be it employee or space. While optimized space utilization is critical to lower the real estate expenses, optimized employee productivity and efficiency always remain at the forefront for business growth. This twin effect can have a huge impact on revenue , profitability and employee satisfaction.

Honeywell Wireless Lighting Management Solution (WLMS) helps organizations enhance their employee as well as space productivity and reduce energy cost by **up to 45%***. It also allows the facility managers to monitor under-utilized workstations, optimize them and save cost. Hugely improving the work environment, this solution provides the right Lighting /LUX level to ensure that employees are productive and satisfied.

SMART LIGHTING CONTROLS FOR SMART BUILDINGS

Honeywell's Wireless Internet of Things (IoT) based Lighting Management solutions delivers the leading technology platform for smart buildings. With our paradigm-shifting advanced multi sensor technology, scalable network with real-time data collection for high-value applications, Honeywell is redefining lighting control smarter.

- Employee Productivity & Satisfaction
- Energy Saving & Optimisation
- Space Utilization

AIRPORT

INSTITUTIONAL BUILDINGS

OFFICES

HOSPITALS

MALLS

BENEFITS

END TO END WIRELESS SOLUTION

True Wireless solution, reduce wiring and install labour cost with reduction in wiring.

SPACE AND ENERGY OPTIMIZATION

Insights from the data collected ,wirelessly, gives a deep understanding of space and light utilization, helps in Space and Energy optimization of the Building

LOW ENERGY CONSUMPTION

Lighting energy consumption in the building can be reduced up to 45% * with the use of IoT technology, thus cutting energy costs and meeting green goals. An additional 16%* energy can be saved through HVAC* based on the inputs of ambient and occupancy sensor

EASY AND FAST INSTALLATION

Wireless sensors are easy to install, programme and service. The solution is ideal for both greenfield and brownfield projects, given that complete system installation can be deployed in a few weeks. This system reduces installation time by 55%.

EMPLOYEE PRODUCTIVITY

Optimum lux levels are maintained at all desks, giving an occupant the right amount of light, enhances productivity.

OCCUPANCY-ANALYTICS & CONTROL

Lighting is switched on/off /dimmed based on occupancy sensing, energy pilferage is avoided and analytics /insights helps for space utilization

DAY LIGHT HARVESTING

For areas in the building that receive abundant natural light, this system reduces the use of artificial lights.

RETROFIT & MULTI-CEILING OFFERING

It is easy to move this wireless and retrofittable solution in case of shifting offices building or even changing its position within the building office.

* HVAC controls will be required

EASE OF ACCESS

Lights across multiple floors, buildings, or sites can be controlled and optimised as per individual needs. Solution components can be easily accessed from anywhere in the facility via the commissioning or centralised software.

EASY TO MAINTAIN

Honeywell's lighting management solution alerts the facility management in case of malfunctions in the solution component. The server also detects battery levels of sensors to prevent downtime. These ensure predictive maintenance and hence reduces the cost of maintenance.

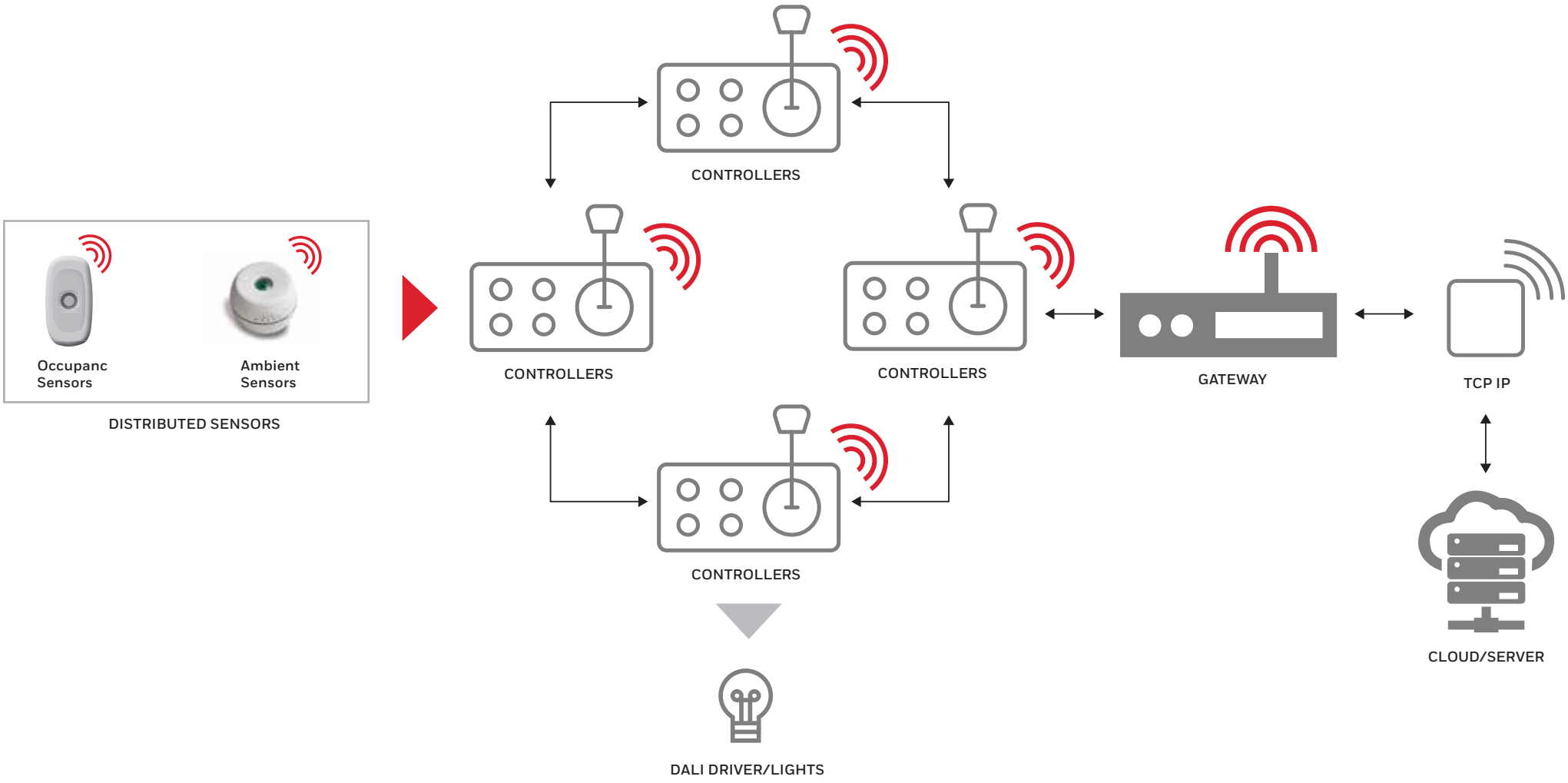
EXTENDED BATTERY LIFE

Batteries in the sensors are designed to last longer than ordinary batteries.

COLOUR VARIANTS

Available in black and white to complement all kinds of ceilings.

SYSTEM ARCHITECTURE



PRODUCT COMPONENTS

WIRELESS OCCUPANCY SENSORS

Wireless Occupancy Sensors are placed in the ceiling above workstations, cabins, meeting rooms and other office areas. These sensors detect human presence and transmit this data to the wireless controllers, which then switch the lights on or off accordingly.

- Passive infrared sensor for detecting human presence
- Field of View: 90˚
- Data communication to DALI Light Controller over Zigbee
  - Transmit Output Power: +4 dBm
  - Receiver Sensitivity: -17 dBm
  - Transmission Range: 50 ft (in open air)
- Battery powered device
  - Uses CR123A battery (1,400 mAh)
- Configurable time-out interval
- Compact ceiling and wall-mountable device

WIRELESS AMBIENT SENSORS

Wireless Ambient Sensors are placed across the floor to measure lux levels. This data is used to adjust the intensity of the light, thereby allowing daylight harvesting and increasing energy savings.

- Integrated sensor for measuring temperature, humidity and lux levels
- Range:
  - Temperature: 0-55ºC
  - Humidity: 0-100% RH
  - Lux: 0-100,000 Lux
- Measurement Accuracy:
  - Temperature: ±0.4ºC
  - Humidity: ±3% RH
- Data communication to Gateway over Zigbee
  - Transmit Output Power: 0 dBm
  - Data Rate: 250 kbps
- Battery powered device
  - Coin cell CR2477N (1,000 mAh)

WIRELESS DALI LIGHT CONTROLLER

The DALI Controller functions as a local data collector and issues a control signal to up to 64 DALI lights over the DALI loop. It also acts as a part of the local mesh network.

- Control device for DALI2.0 lights
- Can control up to 64 lights each
- Receives data from Occupancy Sensors over Zigbee
- Lighting control methods: occupancy-based, manual override
- Communicates occupancy data and receives control commands from the Gateway
- Wireless operating parameters:
  - Transmit Output Power: +4 dBm
  - Receiver Sensitivity: -17 dBm
  - Data Rate: 250 kbps
- Operating Voltage: 85-300 V (AC)
- Ceiling-mountable device

We have a wide range of controllers please reach out to us for more details.

GATEWAYS

Gateways are placed across the floor to collate data from occupancy and ambient sensors from all zones and transmit it to a central server.

- Manages network and data monitoring of the Lighting Management System
- Zigbee network co-ordinator
- Can transmit data over TCP/IP network to the server
  - Wi-Fi and ethernet interface
- Built-in data logging capability
- Wireless Parameters:
  - Transmit Output Power: +10 dBm
  - Receiver Sensitivity: -90 dBm
- Can connect to 60 Zigbee devices
- Ceiling and wall-mountable

THE HONEYWELL ADVANTAGE

Integration with Building Management Solutions through BACnet, Car Parking and Energy Management Solutions

Integration with 3rd party systems

Multi-parameter sensing and control

Wireless sensors for lux measurement at desktop level

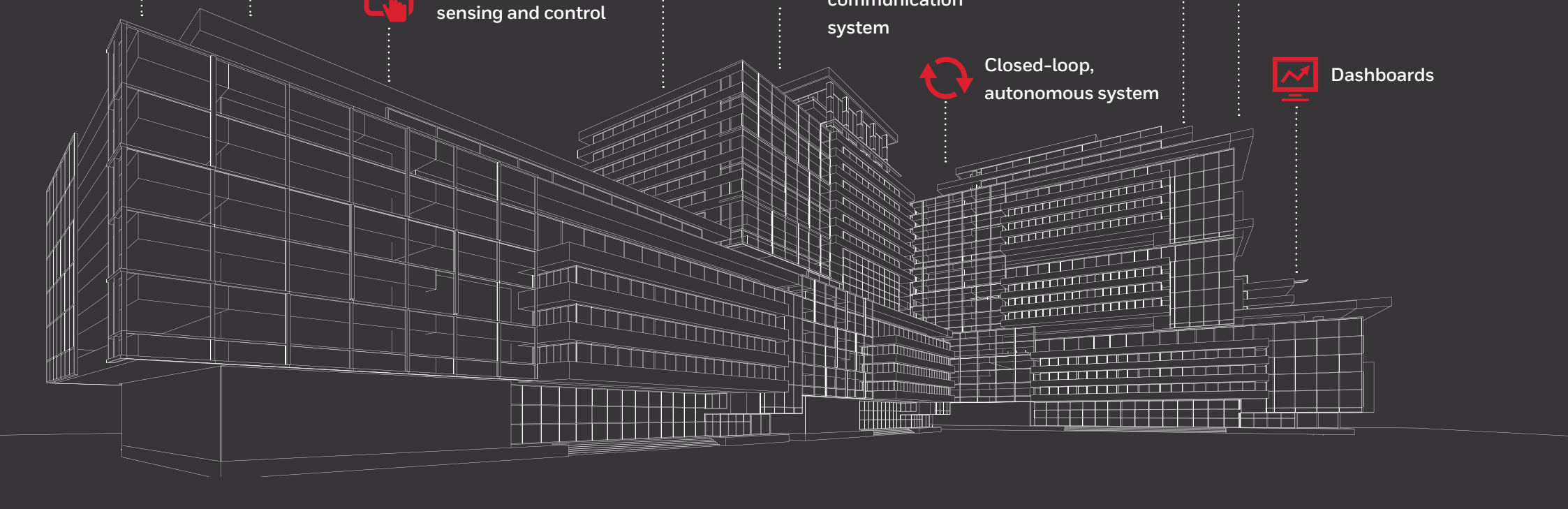
Wireless communication system

Closed-loop, autonomous system

UI-based control for manual overrides and scheduling

Scalable architecture

Dashboards



USER INTERFACE DASHBOARD

Honeywell's IoT platform is a combination of software and hardware devices. Operations for the system and its devices are managed through the software while a Facility Manager or an electrician can operate the complete system through a web app.

The web app allows authorised Facility Managers to view and set controls for the entire facility. The software facilitates scheduled and manual overrides, whenever needed. In addition, it boasts of dashboards with extensive analytics.

- Single page access for any device at any site
- Allows anytime, anywhere access
- Insights
- Optimises lighting operations remotely through an intuitive dashboard that provides lighting usage insights


Lighting Management System
Dashboard > Floor-4
6.8KWH
10.8KW
33°C
67 RH
225LX
THL Heatmap
FLOOR 5
ZONE 1
98
198
1600
Lux Levels For Floor-4
ZONE 2
400
252
1548
Last 24 hour Energy Consumption

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THE FUTURE IS WHAT WE MAKE IT

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