# NETWORKED LIGHTING CONTROLS SERIES

BETTERBRICKS
Powerful Energy Ideas. Delivered by NEEA.

lighting® design lab

## EMERGING TECHNOLOGY TRENDS

This guide outlines emerging technology trends you should be aware of, so you are well positioned to meet new demands from customers.

*The lighting and controls industry is moving rapidly towards a future where connected lighting is the communication and infrastructure backbone for the Internet of Things (IoT). Networked lighting controls will play a key role as we enter the era of smart buildings, connected communities, and smart cities.*

## LIGHTING WILL BE THE BACKBONE OF THE IOT

Lighting is in our homes, in our businesses, and on our streets. Lighting is ubiquitous throughout the world we have built – and it is energized. This simple fact is why many consider lighting to be the backbone of the IoT market transformation.

*Market shift to IoT is occurring as an increasing number of products employ integrated sensors such as LLLC*

The types of sensors now being integrated into luminaires depends on the application. Office lights are equipped with sensors that can talk to HVAC. In retail applications, infrared and Bluetooth detecting sensors embedded in the lights track customer shopping patterns.
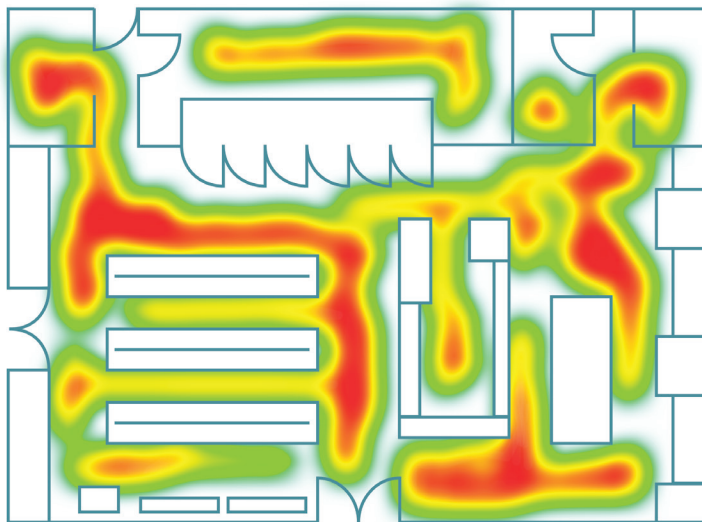


*Typical retail hot-map analytics enabled by Lighting Controls IoT Ecosystem*

### Light & Health



There has been a recent resurgence in the focus on lighting quality, and the physiological effects of light on humans in our homes, businesses, and outdoors.

Ongoing research suggests that lighting – both daylight and electric – play central roles in our endocrine and circadian systems and overall health.

Lighting controls may help to modulate the variables currently being researched, including lighting intensity, duration, timing, and spectral power distribution.

# BILLIONS AND BILLIONS...

There really is no limit in sight to the number or types of sensors that could be embedded into future luminaires. Our lights are capable of doing so much more than just lighting and creating new customer benefits.

## *What's in Tomorrow's Streetlight?*   Smart St.

Parking Management     Public Wireless Networks     Air Pollution Sensors

Seismic Sensors     Concealed Speaker     Gunshot Detection
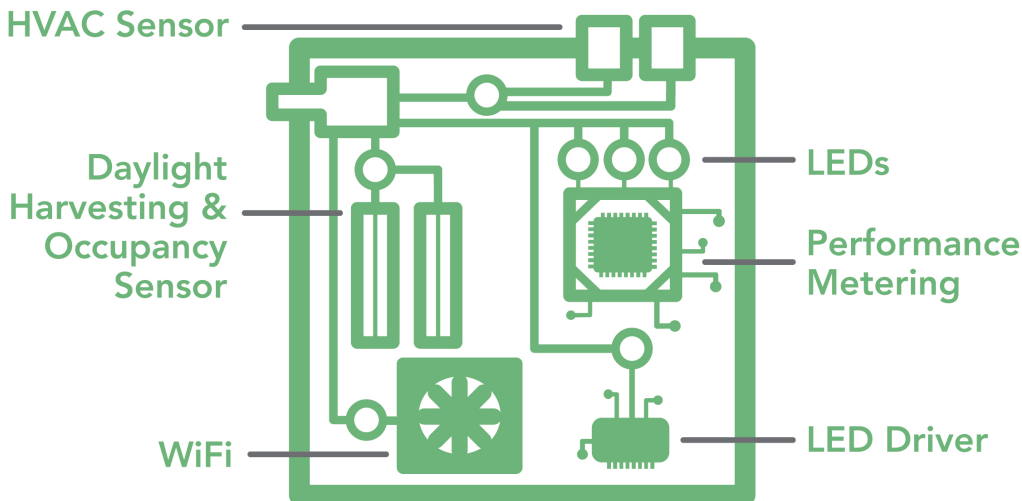
Digital Signage     Wire Theft Detection     And more...

## WHAT'S NEXT: CONTINUED SYSTEM INTEGRATION

As demand for additional services in lighting grows it is becoming more cost-effective for manufacturers to include sensors as a standard offering. Think how hard it would be to buy a cell phone without a camera, or GPS, or accelerometer?

HVAC Sensor

Daylight Harvesting & Occupancy Sensor

WiFi

LEDs

Performance Metering

LED Driver

**Performance Metering**

As networked lighting controls integrate with building management systems, real-time energy monitoring is also becoming a reality.

## TUNABLE WHITE & COLOR TUNING

Luminaires equipped with warm and cool LEDs, or multi-color LED packages may be capable of field selection or correlated color temperature selection.

As the integration trend continues color and white tunable systems will become standard equipment offerings in the future. This will become another key non-energy benefit of smart lighting control.