The future of lighting control...

eye NUT

INGENIOUS CONTROL

Harvard

> "We believe EyeNut addresses many of the drawbacks that are currently limiting the adoption of lighting controls, such as ease of commissioning and the ability to retrofit existing buildings"

Dr Andy Davies
BUSINESS DEVELOPMENT MANAGER FOR INDOOR CONTROLS

41 PERCENT — 41% of commercial electricity consumption in the UK is due to lighting, making it the single highest contributing item on an energy bill

80 PERCENT — 80% of all buildings that will be in use in **2050** in the UK have already been built

75 PERCENT — 75% of all the controllable lighting sold in Europe today is not currently controlled
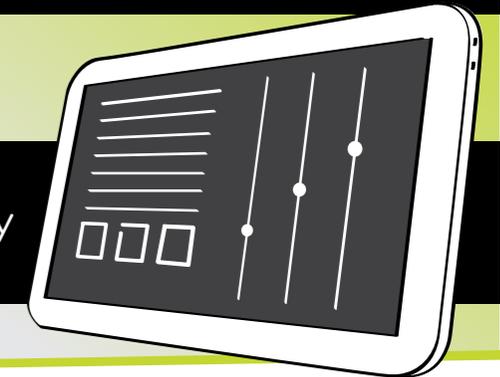
There is HUGE potential for energy savings through lighting controls which are easy to install and capable of retrofit.

Take control

EyeNut is a unique web-based, wireless control, monitoring and management system for indoor lighting. It gives users the freedom to commission, configure and completely control their own lighting to maximise energy savings and reduce carbon emissions.

Early generation lighting controls provided energy savings but were difficult and expensive to fit retrospectively, requiring specialist engineers. Once installed, they were difficult to alter and not well suited to respond to changing occupancy patterns in buildings.

EyeNut banishes these problems. Installation and initial configuration is **simple** and controls can be altered at the touch of a button to meet a building's changing needs. Comparisons with existing technology are impressive; it is capable of **controlling 500 devices**

from one **wireless** gateway compared to DALI's 64.

EyeNut will also allow connection to Building Management Systems and enable a variety of control strategies to be employed, for example daylight harvesting, occupancy sensing, time scheduling, and scene setting.

COMING SOON...
Watch out for Harvard's new range of own-brand switches and sensor with PIR and photocell technology.

IS YOUR LIGHTING OUT OF CONTROL?

IS YOUR LIGHTING WASTING ENERGY?

DO YOU WANT CONTROL WITHOUT THE HEADACHE?
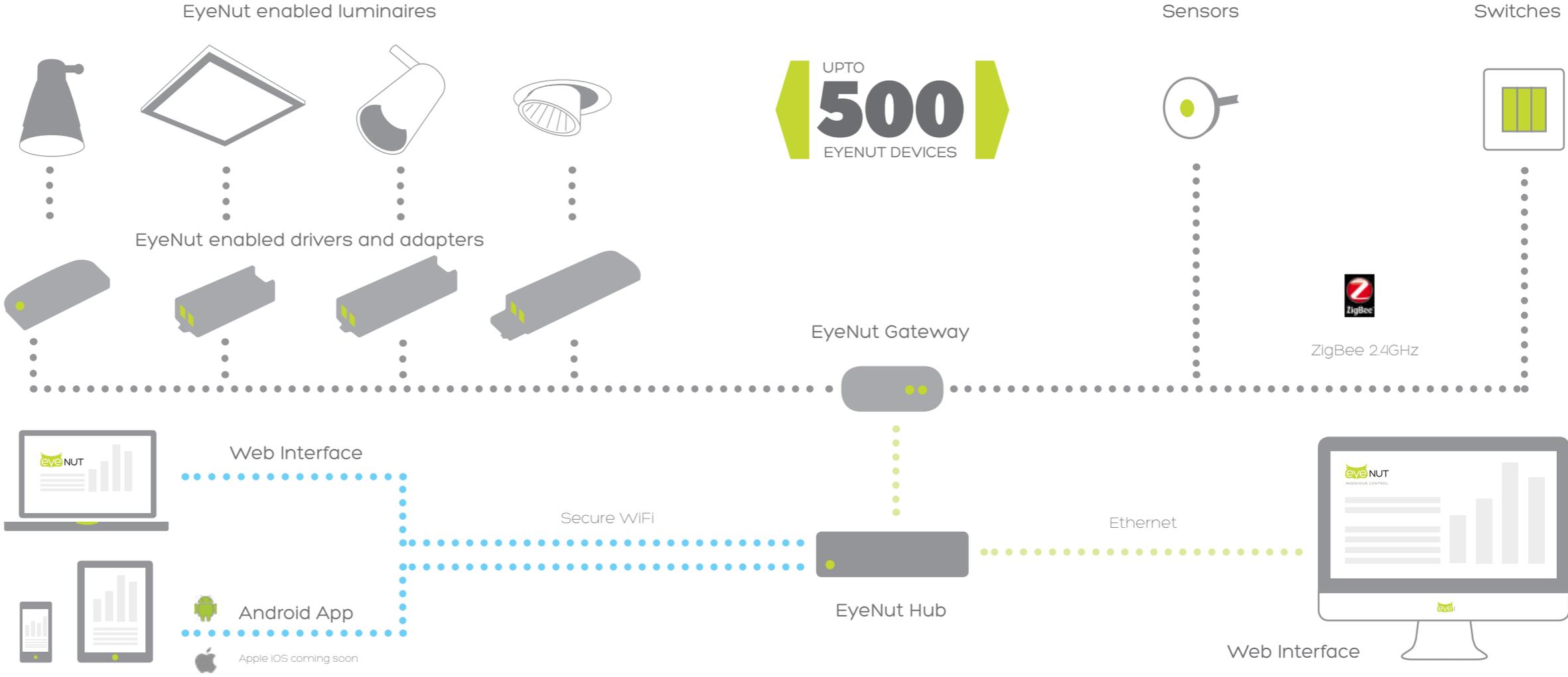
RETAIL

OFFICE

EDUCATION

HOSPITALITY

HEALTHCARE

Controlled technology

In an EyeNut-shell it's…

- Wireless and ideal for retrofit as well as new build

- Easy to install without hiring an expensive specialist engineer and easily configurable

- Intuitively controllable through a graphic user interface

- Suitable for multi-building or multiple site control as well as for small installations

- Able to give a clear view of your energy consumption through a monitoring and reporting capability with sophisticated energy mapping

- Able to integrate with building management systems

- Compatible with other control gear

EyeNut enabled luminaires

Sensors

Switches

UPTO
500
EYENUT DEVICES

EyeNut enabled drivers and adapters

ZigBee

ZigBee 2.4GHz

EyeNut Gateway

Web Interface

Secure WiFi

Ethernet

Android App

Apple iOS coming soon

EyeNut Hub

Web Interface

Harvard

The components

EyeNut Hub

Full control from anywhere in the world

Each installation requires one EyeNut server to act as the central controller for the EyeNut system. It provides the data collection capability, fault monitoring and user interface components and is capable of supporting access by multiple simultaneous users over any number of sites.

It can be located on site, or in the cloud and managed by Harvard. It supports one or more installation devices to aid system configuration and is available in PC or rack-mounted formats.

EyeNut Gateway

The ultimate multi tasking device

The EyeNut Gateway can control up to 500 devices, has a small form factor and provides local control and security for the lighting network subgroup. EyeNut can support multiple Gateways in various configurations.

EyeNut Adaptor/Driver

The fulcrum of all operations

Luminaires can be EyeNut enabled using an EyeNut Adaptor which converts wireless messages to DALI or Analogue, and can be interfaced with existing DALI, 1-10V or 0-10V control gear.

EyeNut LED drivers allow LED luminaires below 33W to be enabled using a single unit.

Switches & Sensors

Constantly monitoring your environment

Switches, sensors and other control devices that conform to the ZigBee Home and Building Automation profile can be used in EyeNut.

Harvard's own EyeNut sensor allows occupancy (presence and absence) and daylight and corridor linking functions to be easily applied to EyeNut enabled luminaires.

COMING SOON!!

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The intelligence

Scalable control
Up to 500 EyeNut devices can be managed from a single gateway, via a robust, secure ZigBee wireless mesh network.
There is no limit to the number of gateways, and therefore the number of devices which can be managed by the central hub, which is also capable of controlling multiple sites and supporting access from multiple users.
The central hub can be located on-site or managed by Harvard in the cloud.

Enabling luminaires is easy
Luminaires can easily be EyeNut enabled by connecting a simple adaptor to existing DALI or analogue control gear across a wide variety of lighting technologies.
Many LED luminaires can use Harvard's Eyenut-enabled LED drivers which convert wireless ZigBee messages into a dimmable LED drive current in a single unit.

Switches and Sensors
Switches, sensors and other control devices that conform to the ZigBee Home and Building Automation profile can be used in EyeNut.
Harvard's own EyeNut sensor allows occupancy (presence and absence) and daylight and corridor linking functions to be easily applied to EyeNut enabled luminaries.

EyeNut Software
The EyeNut software, which can be accessed via a computer, laptop or tablet, allows users to commission and map their lighting.
Users can visualise energy consumption, operating history and luminaire status via a sophisticated suite of reports using data from metering chips inside the EyeNut hardware.

The software

EyeNut identifies devices via radio frequency identification and can create logical groups of luminaires to be controlled together, or control groups where luminaires can be linked to switches or sensors.

Their assigned schedules can be as simple or sophisticated as you like - on, off or different levels with changes up to every 15 minutes, 365 days a year. As building usage alters, these can easily be re-assigned at any time by the operator.

Mapping

The mapping tool means devices can be added onto an imported floor plan to allow control through mapping and the identification of high energy usage 'hot spots'.

A list of all devices connected to the EyeNut system allows control of individual items and for new devices to be added.

Data reporting

Customised reports show energy usage patterns of specific luminaires or groups of luminaires. Fault reporting shows lamp failure or abnormal behaviours, allowing prompt investigation.

Profiling

Set switching and dimming profiles for 24 hour periods, then assign them to individual light points or luminaire groups.
Assign profiles to run at times of your choosing.

Scheduling

Assign profiles to run at times of your choosing using Microsoft Outlook calendar-style interface. Plan in regular profiles, plus holidays and special events, which can all be synchronised through the calendar feature.

Dashboard

EyeNut puts lighting control at your fingertips with its intuitive user dashboard. The dashboard gives an overview of the system, showing key data and allowing quick and easy visualisation of the system's status. It can be displayed prominently on TV screens and is potentially a valuable tool to incentivise staff to change energy use behaviours. Personal control can be allowed with different users having access to different features within the system.

Compatible on Android devices
(Apple iOS coming soon)

Plus many other intuitive user features…

Harvard

Perfect for...

The EyeNut solution can be used across a wide range of industry applications, with specific benefits for each.

Retail

In retail environments, EyeNut provides the benefits of independent **ambient and accent control**, as well as **aisle dimming**.

In addition, **daylight harvesting** allows retailers to offset the amount of electric lighting against the amount of natural light available to properly light a space.

Retailers are able to add **controllability to lighting retrofits**, whilst **managing front and back of house**, as well as **multiple sites**, on **one system**.

Hospitality

For hotels, restaurants and leisure facilities, **scene setting** and **personal occupancy control** allow lighting to be **tailored** to the requirements of each room.

The **time scheduling** feature also means that the lumen level can be tailored to activities taking place at any specific time of day or night.

All areas of the facility can be **managed on the same system**, as can **multiple sites**. Commissioning is also **fast and simple**, meaning downtime across each site is kept to a minimum.

Office

EyeNut allows **personal task tuning**, meaning the lighting level at each desk in an office can be different and **optimum for the task** taking place there.

Corridor linking and the use of **PIR presence detectors** allow for energy and cost savings as lights will only be in use when they are needed.

In addition, in an office site with multiple functions, energy use can be **monitored by occupant** so a facilities manager can understand why one may be using more energy than another.

Education

Time scheduling and **scene setting** allow for the lights in different classrooms or rooms of a school, college or university to be tailored to the activities taking place at any time, allowing **flexibility**.

Multiple buildings, such as across a university campus, can be **controlled on one system**, resulting in ease of use for the facilities manager.

The additional features of **daylight harvesting** and **presence detection** allow for energy and cost savings to be achieved.

Healthcare

In hospitals and other healthcare facilities, managers can adapt the lighting level to the **needs of each individual patient**.

Day and night scheduling means that lights can be dimmed at a specific time of night and brought back to full brightness in the morning, however if an emergency should occur the level of light can be adjusted instantly at the touch of a button.

With **simple and fast commissioning** reducing downtime and adding **controllability** to **retrofit** lighting projects, EyeNut also allows for the control and monitoring of **multiple healthcare sites on one system**.

Fashion Retail Case Study

Requirements

A 4,500m^2 department store, part of a multinational chain, was looking for a wireless lighting control solution offering flexible control of their lighting to accompany the LED retrofit solution being installed in-store. This solution would offer visible energy savings and help reduce associated costs whilst improving the general shopping experience.

EyeNut Solution

The following control strategies were recommended:

• Division of sales floors into zones, separated by aisle areas

• Independent control, within each zone, of ambient lighting, central accent lighting and perimeter accent lighting of vertical surfaces

• Independent control of aisle, stairwell and entrance lighting areas

• Occupancy sensors installed to measure footfall by floor and zone, with the selective dimming of accent lighting to create drama during busy periods

• Switching off accent lighting and dimming ambient lighting during cleaning and stocking, through EyeNut's profiling feature

• Daylight sensors installed in windows, with window lighting to be dimmed or switched off in highly sunlit periods

• An analysis after the first 3 months of stable operation to optimise strategies as part of the Harvard service package

Savings

• Additional 40% saved by controls (on top of savings from LED retrofit)
• 1,500kWh/day usage reduced to 330kWh/day
• Effective power density of 5.6W per m^2
• Two year payback on additional controls investment

40 PERCENT SAVINGS

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www.EyeNut.co.uk

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