



HAVELLS SYLVANIA



LUMINAIRES WITH INTEGRATED LIGHTING CONTROL

A commissioning free lighting control system featuring Organic Response®



INTRODUCTION

With lighting accounting for around 30% of a commercial building's energy consumption, effective lighting can have a significant impact on energy savings. Installing LED fixtures can achieve a saving of 60% but there is more we can do.

Many of today's building codes and regulations require advanced controls in order to achieve the highest rating. The British Council for Offices (BCO) recommends the inclusion of lighting controls to achieve compliance with Part L of the building regulations. BREEAM also gives two points for lighting controls that include daylight and presence sensing and individual light level controls for each luminaire. Organic Response technology achieves all of the above lighting requirements, including daylight linking, constant illumination and occupancy control. By specifying an Organic Response-enabled lighting solution, you can benefit from a plug-and-play lighting controls system which can help make a real difference to your building's performance. Utilising IR wireless distributed intelligence, Organic Response technology allows each individual luminaire to make lighting decisions, providing a truly responsive and energy efficient solution.

Organic Response-enabled luminaires deliver the most advanced lighting control solution that helps you achieve maximum ratings, without the drawbacks of traditional control systems:

- It is **commissioning free**
- There are **no compatibility issues** as all controls are built-in to the luminaires
- Complete flexibility: the system **automatically adjusts** when the layout of a room changes
- **No control cabling** is required

These advantages results in:

- **30%** lower upfront investment compared to DALI¹
- **35%** additional saving compared to standard DALI controls²
- **68%** reduction in energy costs vs non-controlled situation³

Sources

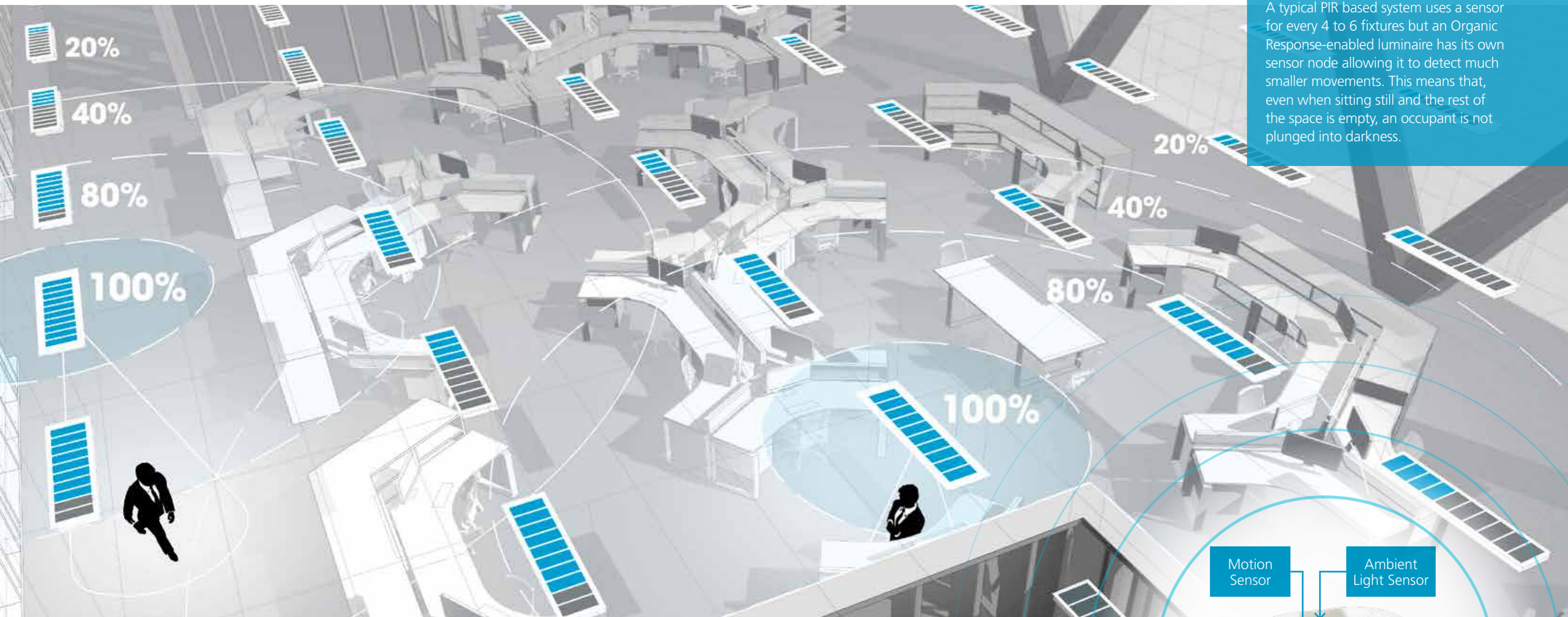
¹ Arup, 2015, ² E.ON 2015, ³ Team Catalyst, Lighting Art + Science, William St. project 2014
Copies available upon request.



Winner of the Lighting Controls category



HOW ORGANIC RESPONSE WORKS



Detect even the smallest movements

A typical PIR based system uses a sensor for every 4 to 6 fixtures but an Organic Response-enabled luminaire has its own sensor node allowing it to detect much smaller movements. This means that, even when sitting still and the rest of the space is empty, an occupant is not plunged into darkness.

Havells Sylvania's Organic Response-enabled luminaires feature a Sensor Node which is integrated into each luminaire during manufacture. Each Sensor Node contains a motion sensor, infrared transmitter, infrared receiver, ambient light sensor and intelligent microprocessor.

Auto-commissioning

There is no need to commission the lighting control as OR-enabled luminaires will automatically detect its surrounding conditions, and set its light output accordingly. As soon as a luminaire is connected to a power supply, it will start detecting. Each luminaire determines occupancy and light levels in its direct vicinity and adjusts the light level accordingly.

The luminaires will also automatically detect their neighbours and inform them whenever they detect presence, altering light levels to suit. The message is relayed through the network enabling more distant luminaires to turn on as well.

Maximum user comfort

The control strategy used by OR results in the highest level of user comfort possible. The nodes light up gradually before a user enters an area preventing sudden light level changes that users perceive as uncomfortable. A typical PIR based system uses a sensor for every 4 to 6 fixtures but an Organic Response-enabled luminaire has its own sensor node allowing it to detect much smaller movements. This means that,

even when sitting still and the rest of the space is empty, an occupant is not plunged into darkness.

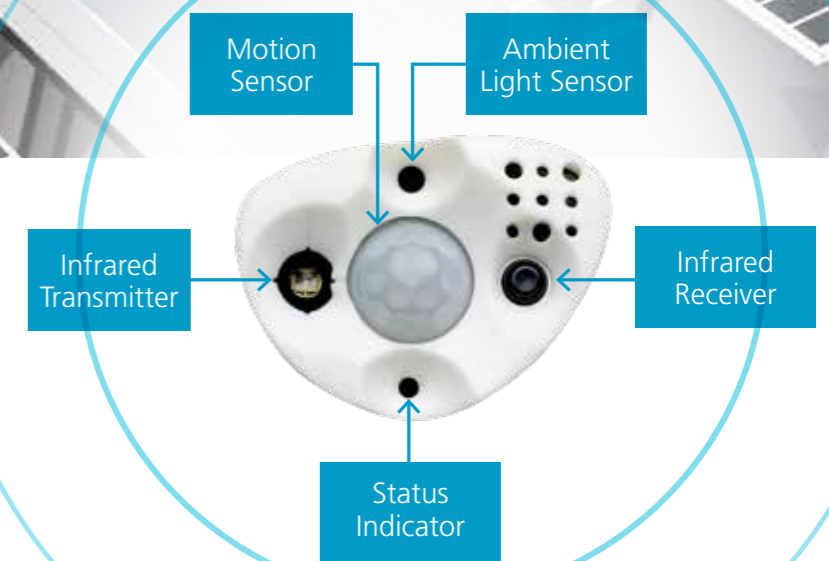
As each luminaire controls its own light levels, every corner of every space is lit in the most appropriate way to suit the way the space is actually being used.

Impressive energy savings possible

By using a much higher number of sensors Organic Response-enabled luminaires can control an area using much finer control. Ensuring that only luminaires that required are illuminated, for example a person sitting alone in an open plan office will only be lit by their nearest fixtures or a luminaire next to a window will automatically detect daylight levels and light as required.

Intuitive app for advanced control setting

The system also has several advanced features that can be simply programmed with the Organic Response App. Lux levels for each luminaire can be individually adjusted in order to ensure the right regulatory lux level is achieved. Different profiles can be set that determine the optimal dimming profile for specific areas, for example in an open-plan office, or for a corridor. Luminaires can also be assigned in zones, with specific settings, eg to never turn off any hallway lights as long as one of the offices is occupied or to keep certain zones 'always on' such as accent lighting on feature walls.



A LIFETIME OF SAVING YOU MONEY

Imagine a lighting solution that saves you money throughout its lifetime – from design and installation through to its total cost of ownership whilst also delivering the best possible light quality to your building occupants.

With Organic Response-enabled LED luminaires from Havells Sylvania – that is what you get.

Whatever your project, be it new build or refurbishment, and for a wide variety of applications, we can deliver cost savings that are extremely impressive.

Organic response is one of the first lighting control solutions that makes sense from both a financial and user-comfort perspective. It is important for specifiers and lighting procurement officials to strike a fine balance between performance and cost. New energy efficient LED luminaires will present a much faster payback period than traditional lighting. Adding controls to the lighting package ensures your system becomes even more efficient.

By utilising Organic Response-enabled luminaires, not only can you enjoy vastly superior lit environments, but you can also enjoy significant savings – in energy as well as expenses – delivering savings on capital expenditure as well as running costs.

To illustrate the strength of OR in terms of Total Cost of Ownership (TCO) we have included example calculations on the opposite page for three common application scenarios. We are happy to run a set of calculations for your specific requirements – contact us to learn more.

From the examples it can be seen that on OR based control solution makes a sound financial investment.



TOTAL COST OF OWNERSHIP EXAMPLES

Open-plan office refurbishment



15,324 Carbon saved (tons)
£2,820 saved per year
5.0 years payback

	With DALI Controls	With OR-enabled luminaires
Payback Period	6.5	5.0
Annual Savings	£ 2,338	£ 2,820
Luminaire	£ 9,657	£ 16,761
Controls	£ 5,524	£ 0
Install	£ 1,840	£ 726
Commissioning	£ 1,920	£ 0
TOTAL CAP EX	£ 18,941	£ 17,487
ECA return (money coming off spend)	£ 3,788	£ 3,497
Annual Running (10p/kWh)	£ 1,111	£ 673
kWh	12,222	7,404
kWh saving	23,385	28,203
Carbon saving (tons)	12,722	15,342

For this example, we have calculated figures for an open-plan office layout featuring 83 standard 600 x 600mm 64W T8 luminaires. Taking into account the reduced installation and commissioning investment, this scenario delivers impressive saving, as well as reducing annual energy consumption from 32,370kwh to 7,404kwh, saving approx. £2,820 per year.

Data centre refurbishment



48,754 Carbon saved (tons)
£6,273 saved per year
2 years payback

	With no controls	With OR-enabled luminaires
Payback period	2.8	2
Annual saving	£ 3,350	£ 6,273
Luminaire	£ 10,708	£ 15,231
Controls	£ 0	£ 0
Install	£ 830	£ 830
Commissioning	£ 0	£ 0
TOTAL CAP EX	£ 11,538	£ 16,061
ECA return (money coming off spend)	£ 2,308	£ 3,212
Annual Running (7p/kWh)	£ 3,248	£ 325
kWh	46,606	4,641
kWh saving	47,856	89,621
Carbon saving (tons)	26,034	48,754
Reduction in cooling	£ 4,187	£ 7,841

This example takes a Data Centre with 142 Twin 58W (118.4) Watt luminaires installed, the installation currently has no controls. Here we highlight potential savings possible by specifying OR-enabled luminaires. Our simulations show that we could achieve a saving of approximately 90% on energy consumption.

Hospital corridor



30,582 Carbon saved (tons)
£5,622 saved per year
1.9 years payback

	With no controls	With OR-enabled luminaires
Payback Period	2.3	1.9
Annual Savings	£ 3,344	£ 5,622
Luminaire	£ 8,671	£ 12,597
Controls	£ 0	£ 0
Install	£ 770	£ 770
Commissioning	£ 0	£ 0
TOTAL CAP EX	£ 9,441	£ 13,367
ECA return (money coming off spend)	£ 1,888	£ 2,673
Annual Running (10p/kWh)	£ 2,883	£ 606
kWh	28,829	6,054
kWh saving	33,441	56,216
Carbon saving (tons)	18,192	30,582

50W OR-enabled luminaires 600x600mm (49 standard and 17 emergency).
• Previously the hospital was fitted with 66 4x18W luminaires, consuming 62,000 kWh

KEY APPLICATION AREAS – FEATURES AND BENEFITS



OFFICE LIGHTING



**HEALTHCARE, EDUCATION
AND LOCAL GOVERNMENT**



PROPERTY DEVELOPER

- Prevent delays – commissioning of a lighting control system can cause sign-off delays. As OR functions immediately as soon as power is connected to the luminaires, there are no delays - your building can open on time
- Adhere to planning requirements – there is increasing pressure to build energy efficient buildings in order to get planning permission, Organic Response-enabled luminaires are a very cost effective way to score additional points

BUILDING OWNER

- Improved returns – Organic Response delivers greener building, lower energy consumption and more comfortable lighting which will attract higher rents
- Shorter rent-free periods – with new tenants coming in, lighting does not need to be recommissioned, shortening moving in periods so landlords can reduce rent-free periods
- Reduce maintenance costs – Malfunctioning lighting control systems are a common cause of maintenance calls. The simplicity and lack of central point of failure of OR has been shown to significantly reduce these calls

TENANT

- Flexibility – tenants can repartition the space without recommissioning or moving sensors, as the system will automatically adapt
- Year on year improvements – deliver energy savings over the years by leveraging the collected data to retune the system or integrate the data with other BMS systems (eg, improve heating)
- Control energy performance/ESOS improvements – tenants have little control over other services (such as insulation), Organic Response-enabled luminaires give tenants the opportunity to improve their energy performance

HEALTHCARE

- Lights on 24/7 – lights are often left on continuously in hallways and corridors when no one is there. By installing Organic Response there is a huge opportunity for energy and cost savings
- It is established Best Practice that no patient should enter a room in darkness, Organic Response-enabled luminaires ensure light is delivered when and where it is needed
- Does not interfere with wireless signals from medical equipment, as signals are transmitted via IR, making it ideal for healthcare applications

EDUCATION

- Light when it is needed – through intelligent motion sensors, light is only used where it is needed so the light can be dimmed in hallways, storage areas and near windows when they are not in use
- Out of hours – particularly suitable for universities with facilities open for long hours, such as libraries etc
- Schools and classrooms often feature many windows, and with Organic Response's daylight sensors, illumination is tailored to utilise daylight to a maximum

LOCAL GOVERNMENT

- Government and local authorities typically have higher energy efficiency targets for their own buildings. Organic response is a perfect solution to help achieve targets such as BREEAM
- Show the visitors that you lead by example and are green. Lighting control is one of the few energy efficiency measures that is immediately visible, highlighting your effort and dedication



DATA CENTRES



RETAIL

OWNER-MANAGED AND CO-LOCATED DATA CENTRES

- Installing more efficient lighting has been shown to increase the power usage effectiveness (PUE) in data centres by 25%. Using Organic Response, the lighting system automatically adjusts its settings to suit conditions in a data centre.
- Never left in the dark – does not rely on timed lighting, it responds to the movement in the room
- Heating – by their very nature, data centres create significant heat. By controlling the lighting with Organic Response-enabled luminaires, operators can reduce the heat output – saving on the expense of running air conditioning systems
- High output when needed – typically, the lighting in data centres runs at 1,000 Lux and is left on all the time
- As control is integrated into each Organic Response-enabled luminaire, no additional control system cabling is required
- The system uses IR signal transmission to ensure no wireless interference which could disrupt other vital systems within the data centre

SUPERMARKETS AND DEPARTMENT STORES

- Reduce store downtime – installation time is significantly shorter with no separate commissioning phase; work is completed when the power is connected, critically reducing downtime of the store
 - Flexibility – the system also supports zoning (which can be simply activated using any mobile phone in combination with the supplied dongle), allowing scenes to be set to suit each retail environment, removing the need for recommissioning of the system and the added expense of bringing in a dedicated expert
 - Many stores have significant back-of-house areas that are rarely used such as storage rooms or offices and Organic Response luminaires can deliver energy savings for these areas
 - Flexibility – with such a flexible control system, the lighting can be programmed to suit any retail layout so you do not have to incur the costs of redesigning the lighting system
- Coming soon
- In store analytics – Organic Response can offer customer analytics – we can visualise all movement data coming from the independent sensors and map this on the floor plan of a store to analyse traffic and footfall to adapt the store to maximise sales



OTHER AREAS



DELIVERING VALUE FOR ALL

HOSPITALITY

- Hallways and Corridors – such areas are often lit 24/7 and require fast reaction times otherwise people are standing in a dark hallway. As the sensor is integrated in the luminaire itself, there is no delay processing signals, so the lights will illuminate as occupants are detected ensuring appropriate light levels at all times
- Security – it can be integrated with the security system, for example to detect people suspiciously wandering the hallways at night

AIRPORTS

- Back-of-house – lighting is not always needed in these areas. You don't need to worry that the lighting is left on all the time, costing money, or that staff are walking into unlit and unsafe environments
 - Minimise downtime – quick to fit, with minimal commissioning, and with integrated lighting control, overrunning installation risks are reduced with no incompatibility issues
 - Gate lighting – with airports featuring numerous gates across large areas, ensure gates are dimmed when not in use, yet pre-lit when occupants approach
- Coming soon
- Heat-mapping – with the use of heat-mapping, owners and operators can reduce cleaning costs, improve security and assign additional staff by knowing exactly what areas have been used and where people are

OVERSEAS AREAS

- Organic Response is working in countries such as Tonga and the Reunion Islands, where blackouts are common because there is not enough electricity to keep the lights on
- In such locations DALI control and qualified engineers are simply not available, making an alternative solution such as Organic Response very apt
 - Number of project participants minimised - only three required: energy supplier, electrician, Havells Sylvania
 - Rapid return on investment - thanks to its simplicity of operation and energy saving capabilities
 - Number of products to order reduced, easy programming, simple and inexpensive solution

ARCHITECT

- Allows your creative vision to be realised, delivering energy efficient buildings that meet energy and performance targets – no compromise on your designs
- Create alluring interiors without interfering with your designs – with no need for wall mounted control panels, interiors can be clean, clutter-free and more in tune with the building occupants
- Improve the energy efficiency and your building's BREEAM, LEED or other certificate's score at no extra cost

LIGHTING DESIGNER

- Save time – choosing luminaires with integrated lighting control removes the need to create a separate control plan
- Your clients can enjoy an unprecedented level of engagement and feel in control of their lighting
- Simple-to-use App allows lux levels to be set easily to required levels in the lighting code, ensuring you are compliant without every over lighting a space

INSTALLER

- Reduce on-site headaches and cut installation time as no separate wiring is required for the control system
- Keep trades to a minimum, you don't need to separately commission the lighting control as it is integrated in the luminaire

ENERGY CONSULTANT

- Deliver significant energy savings to clients at a reduced capital expenditure compared to a DALI system
- Maintain an on-going relationship with your client by leveraging the data from the lighting controls system to deliver further energy savings in the future

MAINTENANCE MANAGER

- A new lighting controls system does not need to be commissioned every time a building layout changes
- Reduce maintenance call-outs – no calls about lighting control system not working
- Gain valuable insights into your building and optimise use of facilities such as meeting rooms and lecture theatres
- Provide full integration into your Building Management System, and optimise heating and security systems using sensor data from your lighting system

INTEGRATION IN THE BUILDING MANAGEMENT SYSTEM

Lighting control is only one step in the direction of energy efficient buildings. To create a truly efficient building we need to look at collaborative approach combining lighting control with the Building Management System (BMS).

The Organic Response Ethernet Gateway (EG) provides an external interface into the Organic Response Occupancy Information Cloud (OIC). This enables third party technologies, such as a Building Management System (BMS) to influence the lighting solution. Because the link is through an Ethernet Gateway, the system is compatible with all major protocols such as BACnet, KNX, LonWorks, Modbus and so on.

Each EG will be configured with a unique IP address so that multiple EGs can be utilised on the same network. Any commands issued to the EG via a TCP connection will be translated and passed to the attached Sensor Node, which will then inject these commands into the OIC. Sensor Nodes neighbouring the EG will receive these commands from the OIC and forward the command on. Messages from the EG can be zone specific so that only specific Sensor Nodes will respond. Further to this, Sensor Nodes can be configured to pass on messages for a specific zone (other than their own), thus giving the EG the ability to control Sensor Nodes that may not be directly adjacent to its location.

Even when connecting to an external interface, Organic Response remains completely wireless, commissioning free and autonomous.



BEYOND LIGHTING CONTROL

In the age of the Internet of Things (IoT) and cloud-based analytics, lighting will become the sensor infrastructure of a building, with the potential to collect very useful data, helping to deliver significant cost savings. Havells Sylvania is at the forefront of this trend, delivering a cloud-based system that enables people to analyse all of the data coming in from their system. Using this data, it will be possible to adapt other services to reduce costs, reduce cleaning on areas of the building unused, heating, cooling and ventilation costs by closing parts of the building unoccupied, adapt security services, even reducing catering costs of a staff cafeteria to ensure the correct amount of food is produced in relation to attendance levels. The list is endless and, working together, the approach will deliver a greener building.

As the IoT evolution marches onwards and new functionality becomes available, it is possible to build the smart building of the future on infrastructure already in place. The only thing that is certain in this new, and exciting, world is that in order to function effectively buildings and systems need to work in sync, knowing about the occupants – their presence, their movement patterns, their behaviour and this can only be achieved through sensors. With Organic Response-enabled fixtures, you already have the sensors in place.

APPLICATION AND SPECIFICATIONS

Organic Response Sensor Nodes communicate with each other to form a smart sensor network. The system relies on peer-to-peer communication between neighbouring Sensor Nodes to functionality, and allow the light fittings to operate as a system.

There are several factors that govern the communication range of any one Sensor Node; including the nature of the flooring material, height of the luminaires, and distance between each luminaire. The diagram below illustrates the requirements to ensure that the system operates correctly:

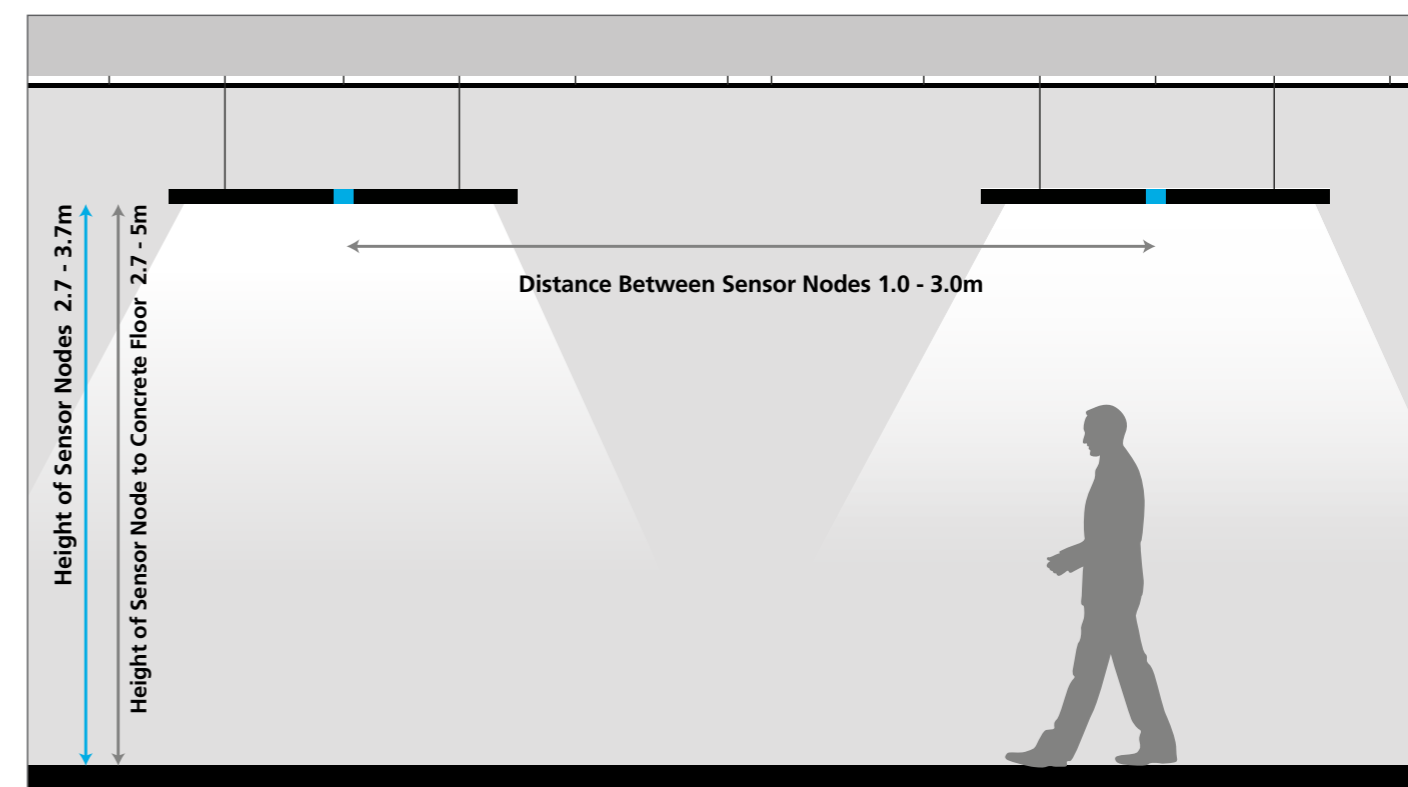


Figure 1: Recommended height and distances between Sensor Nodes. Please note this does not apply for IP rated luminaires.

The above diagram sets out the standard conditions for optimal performance of the Organic Response Sensor Nodes. However, in some cases it may be possible for the system to function in areas where the ceiling height exceeds 3.7m (up to 5m in height). In such circumstances, a site audit will be necessary to establish the suitability of the space for an Organic Response installation. Please contact your local representative who will be happy to arrange a site visit.

In the case of communication between two nodes at two sides of a wall (for example to leave the corridor lights on as long as an office is occupied), it is necessary to install a 'wall-link'. The system currently does not work in combination with IP rated luminaires.

A WIDE RANGE OF ORGANIC RESPONSE-ENABLED LUMINAIRES



OUR INNOVATIVE PRODUCTS

OFFICELYTE LED

Concord

Concord Officelyte LED has Organic Response technology incorporated into the luminaire, offering flexibility as well as out-of-box functionality and efficiency. With a slim fully enclosed design profile that meets building regulations, the Officelyte LED Low Profile includes a typical rating of 80 luminaire lumens per circuit watt and a lumen output of up to 4,439lm, making it one of the most efficient luminaires available on the market in its class.



RANA

SYLVANIA

The Sylvania RANA offers a dynamic approach to commercial lighting by suiting both retrofit and new installations. To help create a harmonious lighting scheme, a complete range of recessed modular, surface and suspended luminaires are available, furthering the already impressive Sylvania Luminaires Office portfolio.



RUBICO

SYLVANIA

Sylvania Rubico, which comes in both 600 x 600mm and 1,200 x 300mm sizes, provides contractors and end-users with a high-output, easy-to-install office lighting solution at a competitive price. Rubico builds on the comprehensive portfolio of office lighting products already under the Havells Sylvania umbrella.



See www.havells-sylvania.com for the full list of compatible products.

ORDERING GUIDES

Concord

Item code	Description	Energy Class	Voltage (V)	System power consumption (W)	Lumen output (lm)	Lumen / Watt (lm/W)	Weight (kg)
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CONCORD OFFICELYTE LOW PROFILE LINEAR MODELS

Officelyte Low Profile – 600 x 600mm / 625 x 625mm modules 4,000K – Organic Response & Emergency 3 hour							
2068212	Officelyte LP LED HE 4K 600 OR	A++, A+, A	220-240	34	3393	100	6.3
2068213	Officelyte LP LED HE 4K 600 OR EM	A++, A+, A	220-240	37	3393	100	8
2068215	Officelyte LP LED HO 4K 600 OR	A++, A+, A	220-240	48	4549	95	6.3
2068216	Officelyte LP LED HO 4K 600 OR EM	A++, A+, A	220-240	51	4549	95	8
2069229	Officelyte LP LED HE 4K 625 OR	A++, A+, A	220-240	34	3393	100	6.3
2069231	Officelyte LP LED HO 4K 625 OR	A++, A+, A	220-240	48	4549	95	8

CONCORD OFFICELYTE LOW PROFILE LINEAR MODELS

Officelyte Low Profile Linear – 1200 x 300mm modules 4,000K – Organic Response & Emergency 3 hour							
2058154	Officelyte Linear 12x3 HE 4K S330G OR	A++, A+, A	220-240	34	3387	100	5.2
2058155	Officelyte Linear 12x3 HE 4K S330G OR EM	A++, A+, A	220-240	34	3387	100	6.9
2058159	Officelyte Linear 12x3 HO 4K S330G OR	A++, A+, A	220-240	48	4503	94	5.2
2058160	Officelyte Linear 12x3 HO 4K S330G OR EM	A++, A+, A	220-240	48	4503	94	6.9
2058164	Officelyte Linear 12x3 HE 4K S330 OR	A++, A+, A	220-240	34	3387	100	5.2
2058165	Officelyte Linear 12x3 HE 4K S330 OR EM	A++, A+, A	220-240	34	3387	100	6.9
2058169	Officelyte Linear 12x3 HO 4K S330 OR	A++, A+, A	220-240	48	4503	94	5.2
2058170	Officelyte Linear 12x3 HO 4K S330 OR EM	A++, A+, A	220-240	48	4503	94	6.9
2058194	Officelyte Linear 12x3 HE 4K S330A OR	A++, A+, A	220-240	34	3387	100	5.2
2058195	Officelyte Linear 12x3 HE 4K S330A OR EM	A++, A+, A	220-240	34	3387	100	6.9
2058199	Officelyte Linear 12x3 HO 4K S330A OR	A++, A+, A	220-240	48	4503	94	5.2
2058200	Officelyte Linear 12x3 HO 4K S330A OR EM	A++, A+, A	220-240	48	4503	94	6.9

CONCORD OFFICELYTE CLASSIC MODELS

Officelyte Classic – 600 x 600mm modules 4,000K – Organic Response & Emergency 3 hour							
2058992	Officelyte Classic LED HE 4K OR	A++, A+, A	220-240	34	2824	83lm/W	6.5
2058993	Officelyte Classic LED HE 4K OR EM	A++, A+, A	220-240	34	2824	83lm/W	8.2
2058994	Officelyte Classic LED HO 4K OR	A++, A+, A	220-240	48	3750	78lm/W	6.5
2058995	Officelyte Classic LED HO 4K OR EM	A++, A+, A	220-240	48	3750	78lm/W	8.2

SYLVANIA

Item code	Description	Energy Class	Voltage (V)	System power consumption (W)	Lumen output (lm)	Lumen / Watt (lm/W)	Weight (kg)
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RUBICO MODELS

Rubico LED Gen 2 – 600 x 600mm modules 4,000K – Organic Response							
0044548	RUBICO 600 50W LED 4000 OR	A++, A+, A	220-240	46	3,656	79	4.7
Rubico LED Gen 2 - 600 x 600mm module - 4,000K - Organic Response & Emergency 3 hour							
0044549	RUBICO 600 50W LED 4000 OR E3	A++, A+, A	220-240	46	3,656	79	5.5

Legend: 600 = 600 x 600mm module; 4000 = 4,000K Neutral White; OR = Organic Response; E3 = Emergency 3 hour

Rubico Fluorescent - 600 x 600mm module - 4,000K - Organic Response							
0044557	RUBICO 414 MPO 840 OR	A++, A+, A	220-240	56	3,612	65	3.1
0044558	RUBICO 224 MPO 840 OR	A++, A+, A	220-240	50	2,743	55	3.1
Rubico Fluorescent - 600 x 600mm module - 4,000K - Organic Response & Emergency 3 hour							
0044560	RUBICO 414 MPO 840 OR E3	A++, A+, A	220-240	56	3,612	65	3.8
0044561	RUBICO 224 MPO 840 OR E3	A++, A+, A	220-240	50	2,743	55	3.8

Legend: 840 = 4,000K Neutral White; OR = Organic Response; E3 = Emergency 3 hour

ORDERING GUIDES



Item code	Description	Energy Class	Voltage (V)	System power consumption (W)	Lumen output (lm)	Lumen / Watt (lm/W)	Weight (kg)
RANA MODELS							
RANA LED Recessed - 600 x 600mm / 1200 x 300mm modules - 3,000K - Organic Response							
0052286	RANA LED 600 CM+P 2*LL 3K OR	A++,A+,A	220-240	32	2,970	94	4.0
0052287	RANA LED 600 CM+P 3*LL 3K OR	A++,A+,A	220-240	48	4,470	93	3.7
0052285	RANA LED 1200 CM+P 1*LH 3K OR	A++,A+,A	220-240	32	2,898	92	4.0
0052288	RANA LED 1200 CM+P 2*LH 3K OR	A++,A+,A	220-240	64	5,650	88	3.8
RANA LED Recessed - 600 x 600mm / 625 x 625mm / 1200 x 300mm / 1250 x 312mm modules - 4,000K - Organic Response							
0052290	RANA LED 600 CM+P 2*LL 4K OR	A++,A+,A	220-240	32	3,170	101	4.0
0052291	RANA LED 600 CM+P 3*LL 4K OR	A++,A+,A	220-240	48	4,700	98	3.7
0052289	RANA LED 1200 CM+P 1*LH 4K OR	A++,A+,A	220-240	32	3,135	100	4.0
0052292	RANA LED 1200 CM+P 2*LH 4K OR	A++,A+,A	220-240	64	6,050	95	3.8
0052294	RANA LED 625 CP 2*LL 4K OR	A++,A+,A	220-240	32	3,170	101	4.0
0052295	RANA LED 625 CP 3*LL 4K OR	A++,A+,A	220-240	48	4,700	98	3.7
0052293	RANA LED 1250 CP 1*LH 4K OR	A++,A+,A	220-240	32	3,135	100	4.0
0052296	RANA LED 1250 CP 2*LH 4K OR	A++,A+,A	220-240	64	6,050	95	3.8
RANA LED Recessed - 600 x 600mm / 1200 x 300mm modules - 4,000K - Organic Response & Emergency 3 hour							
0052298	RANA LED 600 CM+P 2*LL E3 4K OR	A++,A+,A	220-240	37	3,170	87	5.0
0052299	RANA LED 600 CM+P 3*LL E3 4K OR	A++,A+,A	220-240	53	4,700	89	4.7
0052297	RANA LED 1200 CM+P 1*LH E3 4K OR	A++,A+,A	220-240	37	3,135	86	5.0
0052300	RANA LED 1200 CM+P 2*LH E3 4K OR	A++,A+,A	220-240	69	6,050	88	4.8
RANA LED Surface - 615mm x 615mm / 1183mm x 187mm - 3,000K - Organic Response							
0051191	RANA LED D W CM+P 2*LL 3K OR	A++,A+,A	220-240	32	2,970	94	5.1
0051192	RANA LED D W CM+P 3*LL 3K OR	A++,A+,A	220-240	48	4,470	93	5.1
0051190	RANA LED D W CM+P 1*LH 3K OR	A++,A+,A	220-240	32	2,898	92	3.6
0051193	RANA LED D W CM+P 2*LH 3K OR	A++,A+,A	220-240	64	5,650	88	3.5
RANA LED Surface - 615mm x 615mm / 1183mm x 187mm - 4,000K - Organic Response							
0051195	RANA LED D W CM+P 2*LL 4K OR	A++,A+,A	220-240	32	3,170	101	5.1
0051196	RANA LED D W CM+P 3*LL 4K OR	A++,A+,A	220-240	48	4,700	98	5.1
0051194	RANA LED D W CM+P 1*LH 4K OR	A++,A+,A	220-240	32	3,135	100	3.6
0051197	RANA LED D W CM+P 2*LH 4K OR	A++,A+,A	220-240	64	6,050	95	3.5
RANA LED Surface - 615mm x 615mm / 1183mm x 187mm - 4,000K - Organic Response & Emergency 3 hour							
0051199	RANA LED D W CM+P 2*LL E3 4K OR	A++,A+,A	220-240	37	3,170	87	6.1
0051200	RANA LED D W CM+P 3*LL E3 4K OR	A++,A+,A	220-240	53	4,700	89	6.1
0051198	RANA LED D W CM+P 1*LH E3 4K OR	A++,A+,A	220-240	37	3,135	86	4.6
RANA Recessed - 600 x 600mm / 1200 x 300mm modules - 3,000K - Organic Response							
0049996	RANA600 1092 314 T5 MPM PRO+ 830 OR	A++,A+,A	220-240	51	3,508	69	3.4
0049997	RANA600 1092 414 T5 MPM PRO+ 830 OR	A++,A+,A	220-240	68	3,669	54	3.5
0050000	RANA1200 1092 128 T5 MPM PRO+ 830 OR	A++,A+,A	220-240	32	2,386	75	3.9
0050001	RANA1200 1092 228 T5 MPM PRO+ 830 OR	A++,A+,A	220-240	64	4,688	73	3.6
RANA Recessed - 600 x 600mm / 1200 x 300mm modules - 4,000K - Organic Response							
0049994	RANA600 1092 314 T5 MPM PRO+ 840 OR	A++,A+,A	220-240	51	3,508	69	3.4
0049995	RANA600 1092 414 T5 MPM PRO+ 840 OR	A++,A+,A	220-240	68	3,669	54	3.5
0049998	RANA1200 1092 128 T5 MPM PRO+ 840 OR	A++,A+,A	220-240	32	2,386	75	3.9
0049999	RANA1200 1092 228 T5 MPM PRO+ 840 OR	A++,A+,A	220-240	64	4,688	73	3.6
RANA Recessed - 600 x 600mm / 1200 x 300mm modules - 4,000K - Organic Response & Emergency 3 hour							
0050002	RANA600 1092 314 T5 MPM PRO+ 840 OR E3	A++,A+,A	220-240	51	3,508	69	4.5
0050003	RANA600 1092 414 T5 MPM PRO+ 840 OR E3	A++,A+,A	220-240	68	3,669	54	4.6
0050004	RANA1200 1092 128 T5 MPM PRO+ 840 OR E3	A++,A+,A	220-240	32	2,386	75	4.9
0050005	RANA1200 1092 228 T5 MPM PRO+ 840 OR E3	A++,A+,A	220-240	64	4,688	73	4.6
RANA Surface - 615mm x 615mm / 1183mm x 187mm - 3,000K - Organic Response							
0050191	RANA D W 1092 314 T5 EB PRO+ 830 OR	A++,A+,A	220-240	51	3,508	69	4.9
0050192	RANA D W 1092 414 T5 EB PRO+ 830 OR	A++,A+,A	220-240	68	3,669	54	5.0
0050195	RANA D W 1092 128 T5 EB PRO+ 830 OR	A++,A+,A	220-240	32	2,386	75	3.7
0050196	RANA D W 1092 228 T5 EB PRO+ 830 OR	A++,A+,A	220-240	64	4,688	73	3.2
RANA Surface - 615mm x 615mm / 1183mm x 187mm - 4,000K - Organic Response							
0050189	RANA D W 1092 314 T5 EB PRO+ 840 OR	A++,A+,A	220-240	51	3,508	69	4.9
0050190	RANA D W 1092 414 T5 EB PRO+ 840 OR	A++,A+,A	220-240	68	3,669	54	5.0
0050193	RANA D W 1092 128 T5 EB PRO+ 840 OR	A++,A+,A	220-240	32	2,386	75	3.7
0050194	RANA D W 1092 228 T5 EB PRO+ 840 OR	A++,A+,A	220-240	64	4,688	73	3.2
RANA Surface - 615mm x 615mm / 1183mm x 187mm - 4,000K - Organic Response & Emergency 3 hour							
0050197	RANA D W 1092 314 T5 EB PRO+ 840 OR E3	A++,A+,A	220-240	51	3,508	69	5.7
0050198	RANA D W 1092 414 T5 EB PRO+ 840 OR E3	A++,A+,A	220-240	68	3,669	54	4.8
0050199	RANA D W 1092 128 T5 EB PRO+ 840 OR E3	A++,A+,A	220-240	32	2,386	75	4.5

Legend: D = Direct; W = White; 830 = 3,000K Warm White lamp; 840 = 4,000K Neutral White lamp; OR = Organic Response; E3 = Emergency 3 hour

ACCESSORIES



IOS App

Download the app from the Apple App Store (free) and use to tailor your Organic Response system to suit your needs. Has to be used in conjunction with the IR Dongle.



IR Dongle:

Allows for configuration and customisation of your Organic Response Installation. Simply attach the IR dongle to the audio port of your Apple IOS device and use in conjunction with the Organic Response app.



Wall switch

Enables user control of light scenes and dimming of luminaires within a designated area



Sensor Node Kit

Add extra sensor nodes to your lighting scheme in addition to those located within the luminaire for further coverage within confined spaces.



Organic Response Sensor Node Link

Gives you the flexibility link together extra Sensor Nodes within your lighting scheme.

Item code	Description
ACCESSORIES	
0041700	Organic Response IR Dongle V2.0
0041701	Organic Response Wall Switch 2 (6-Button)
0041702	Organic Response Sensor Node Link
0041703	Organic Response Ethernet Gateway 2
0041706	Organic Response Detached Sensor Kit V2.0
0041707	Organic Response Sensor Kit V2.0 Metal
0041708	Organic Response SN CABL JST-RJ45 50CM V2
0041709	Organic Response Demokit V2.0

CASE STUDIES



OFFICE SPACE, LONDON, UK

Organic Response-enabled luminaires can be found in a wide variety of projects across the world. Organisations including retail outlets, commercial businesses and even charities are benefiting from the energy saving credentials of this innovative lighting control solution. Here are three examples of businesses that have recently installed Organic Response and are reaping the rewards...

A charity organisation based in Southwark, London has benefited from the energy saving potential of Organic Response technology. This five storey, 2,000m² office space was refurbished using 240 Organic Response-enabled Concord OfficeLyte LED recessed luminaires. As well as illuminating the main open plan areas, our Organic Response-enabled luminaires were also installed in both the large and small meeting rooms.

By installing Havells Sylvania luminaires with integrated lighting control, the charity benefitted from a reduced installation time, thanks to the easy set-up of the luminaires. Often stressful handover deadlines were comfortably met due to quick zone commissioning, thanks to the system's ability to be configured as soon as each part of the building was completed. The organisation saw immediate lighting energy savings as soon as each zone was commissioned, thanks to the independent, yet connected, nature of each luminaire.



FITNESS 24 SEVEN, TURKU, FINLAND

Fitness 24 Seven, one of the Nordic region's fastest growing fitness chains, has installed over 85 Sylvania RANA Organic Response-enabled luminaires at its gym in Turku, Finland and is now profiting from an energy-efficient and easily controlled lighting system.

Fitness 24 Seven started in Sweden in 2012 and has grown rapidly over the last three years, opening branches across the Nordic region. The company employs approximately 70 staff and provides quality fitness services at affordable prices. Fitness 24 Seven believes that the best training occurs at a convenient time for members, which is why all of their centres are always open and at easily accessible locations.

As the gym is open 24 hours a day, seven days a week the owners required a lighting solution that could easily and simply adapt to suit the occupant levels and environmental conditions within building. Staff members are also not in the gym at all times so the lighting needed to react automatically when it sensed motion from customers entering the building. The Sylvania RANA Organic Response-enabled luminaires were chosen to meet this demand, and have been installed in the open gym space and in two rooms on the first floor of the building that also benefit from natural daylight.



LANSIPUISTO 24, PORI, FINLAND

Another office building that features the innovative Organic Response lighting control technology is Länsipuisto 24, the base for the Finnish city of Pori's IT department. The building's unusual construction, featuring concrete beams protruding from the ceiling, made a traditional wired controls system an expensive and time consuming option. However, specifying luminaires with integrated intuitive and wireless control proved to be the perfect choice.

The owners required an easy to use and instinctive lighting control solution that included motion sensors and no wall switches. The lighting scheme was installed across two floors of the building, in the open office space and several small closed office rooms. Due to the concrete support beams it was not possible to install the luminaires in the ideal places according to the floor plan and office tables. For this reason, the lighting levels of most of the fixtures had to dimmed down individually in order to create an even light level in the open office space. The Organic Response solution proposed by Havells Sylvania proved to be the ideal choice.

HAVELLS SYLVANIA: GLOBAL SUPPORT, LOCAL KNOWLEDGE



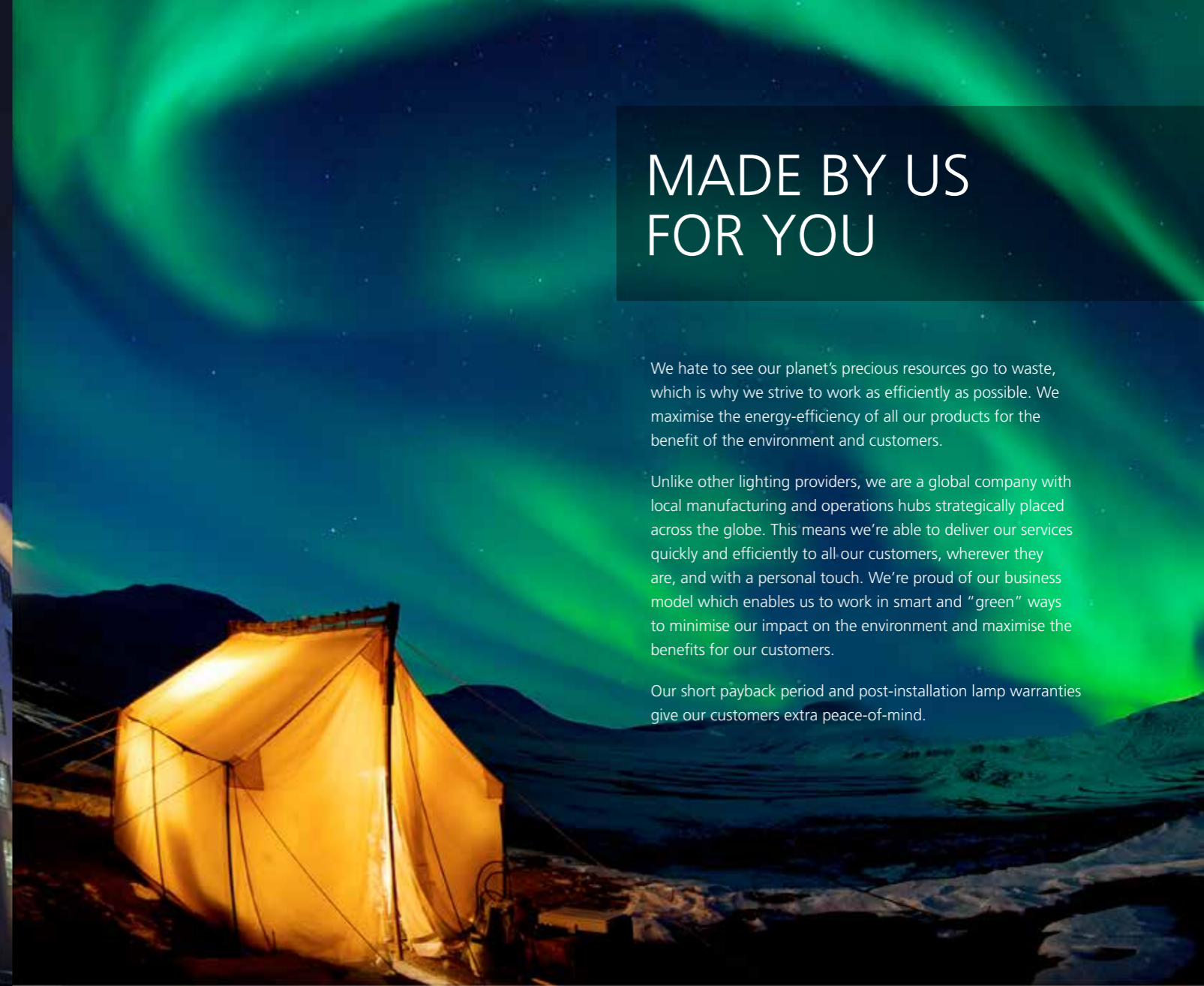
HAVELLS, NOIDA, INDIA

MADE BY US FOR YOU

We hate to see our planet's precious resources go to waste, which is why we strive to work as efficiently as possible. We maximise the energy-efficiency of all our products for the benefit of the environment and customers.

Unlike other lighting providers, we are a global company with local manufacturing and operations hubs strategically placed across the globe. This means we're able to deliver our services quickly and efficiently to all our customers, wherever they are, and with a personal touch. We're proud of our business model which enables us to work in smart and "green" ways to minimise our impact on the environment and maximise the benefits for our customers.

Our short payback period and post-installation lamp warranties give our customers extra peace-of-mind.



Formed in 2007, Havells Sylvania is part of Havells India Ltd, a company worth over \$1 billion (US). With 94 branches and representative offices worldwide, and over 8,000 employees working in more than 50 countries; Havells India Ltd has grown exponentially since its humble beginnings in Delhi in 1958.

The Havells group has eighteen manufacturing plants across Europe, India, Latin America and Africa where we design and build our globally-acclaimed lighting products including switchgear, luminaires, lamps, cabling and controls. We're committed to delivering exceptional customer service and unrivalled design. Being a diverse manufacturer we are able to offer customers the best technology, product solutions, warranties, finance and provide them with a dedicated lighting design team. All over the world, people rely on our brands – *Concord*, *Lumiance* and *Sylvania* – for top quality, energy-efficient lighting to suit their individual needs.

Concord Lumiance SYLVANIA



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