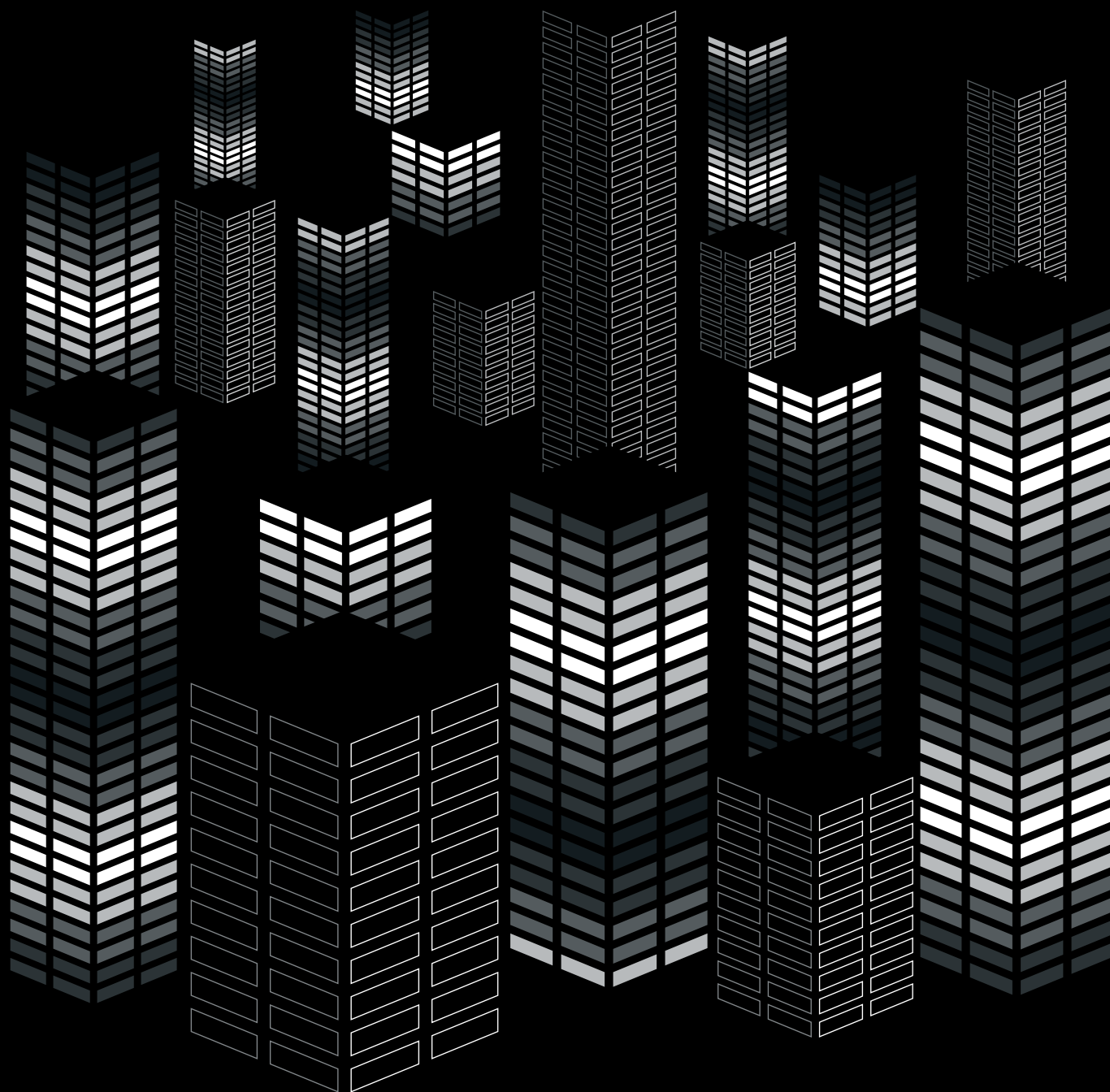


# Truly Revolutionary Lighting Control Technology



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Maximum energy savings  
Maximum cost savings

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Achieves highest building  
environmental ratings

---

Incredibly simple,  
low cost installation  
with NO commissioning

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Automatically adapts  
to office reconfiguration,  
with effortless task lighting



# The Inspiration for Organic Response®

**LIGHTING TODAY'S WORKPLACE IS A CHALLENGING TASK.** Basic lighting control systems don't maximise energy savings, or give you the flexibility and customisations needed for optimal occupancy comfort. More complex systems, whilst delivering greater energy savings, outsmart themselves by being expensive, inflexible and... well, complex!

At Organic Response®, we went back to basics and found the answer in nature. Or, more accurately, in a school of fish.



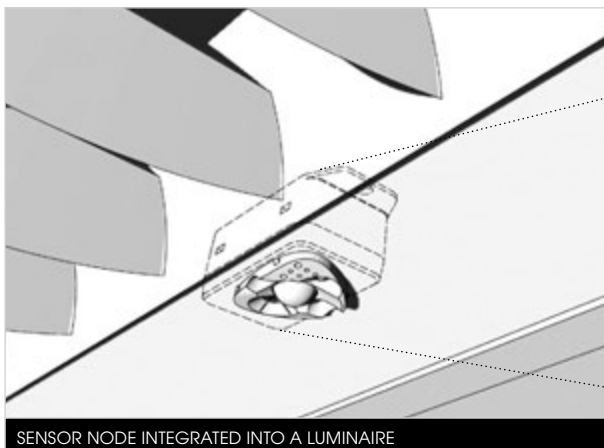
A school of fish moves effortlessly and in complete harmony with nature, with individual fish continuously making small decisions in response to the actions of their immediate neighbours and the environment.

Each fish is smart enough to operate independently, yet is part of an elegantly flexible system of *Distributed Intelligence* that solves complex problems easily without the need for centralised control.

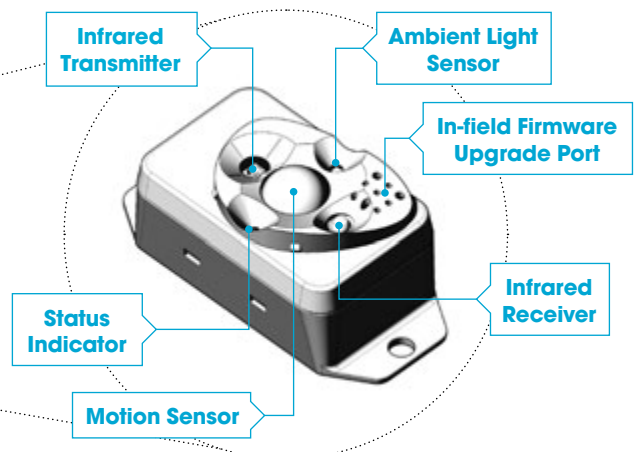
Inspired by this idea, Organic Response® has developed a Distributed Intelligence lighting control system that allows each individual luminaire to make lighting decisions based on the presence of occupants in its immediate vicinity, ambient light levels, and information it receives from its neighbouring luminaires. It then contributes information back to the luminaire community, so other luminaires can also make more informed lighting decisions. Although they make decisions individually, Distributed Intelligence means all the lights in a defined space act as a coordinated community.

**THE RESULT?** A highly flexible, energy efficient lighting control system that is incredibly simple and cost-effective to install. And, it's actually enjoyable to work with. Really.

At the heart of Distributed Intelligence is the Sensor Node, which is integrated into each luminaire during assembly. Each Sensor Node contains a motion sensor, infrared transmitter, infrared receiver and ambient light sensor (with spectral response perfectly matched to the human eye).



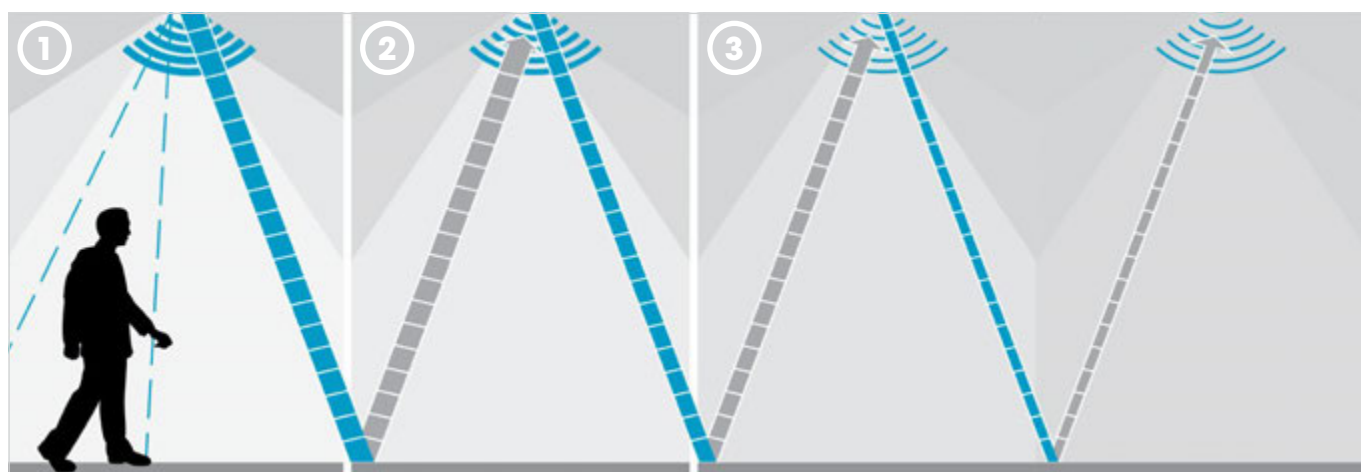
SENSOR NODE INTEGRATED INTO A LUMINAIRE





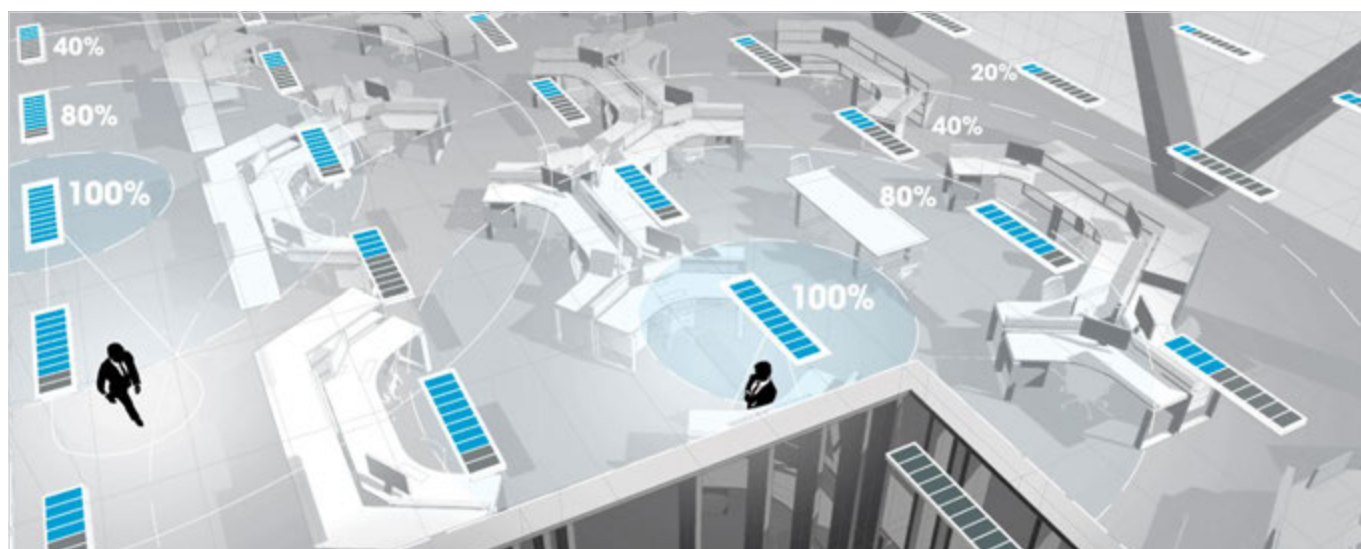
# How Organic Response<sup>®</sup> Works

- 1** The moment a Sensor Node detects occupancy, it switches on its luminaire to a predetermined level. It simultaneously communicates with its immediate neighbours, using proximity limited wireless infrared, telling them it can see someone.
- 2** On receipt of this signal (and even though it may not itself detect anyone), the neighbouring Sensor Node switches its luminaire on to a specified level (e.g. 80% brightness), and simultaneously relays a signal to its own neighbours, telling them that one of its immediate neighbours can see someone.
- 3** This propagates rapidly throughout the floor with each Sensor Node receiving a signal indicating how close someone is to it, and emitting a pre-programmed light level based on that occupancy information, after adjusting for ambient light. Simultaneously, it increments the signal by one level and re-transmits it.









This results in comfortable lighting conditions around occupants, lower light levels in areas adjacent to them, but no wasted lighting of unoccupied or naturally lit areas.

A simple smartphone app allows individual luminaire brightness to be trimmed to optimal levels for specific tasks or the local environment. Alternatively, *relay configuration*, using the infrared communication described above, allows a whole floor to be configured with the press of a few buttons on the app.



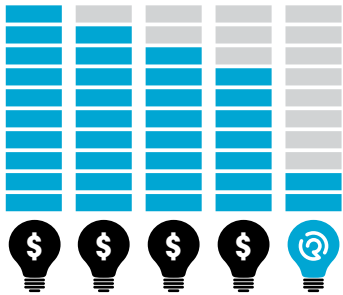
# Features & Benefits of Organic Response®

		BENEFITS				
		Building Owners/Tenants	Facilities Managers	Lighting Engineers/Designers	Electrical Contractors	Occupants
FEATURES	<b>SENSOR NODE INTEGRATED INTO EACH LUMINAIRE</b>  <b>PLUG &amp; PLAY</b> <ul style="list-style-type: none"> <li>- SIMPLE "PLUG &amp; PLAY" INSTALLATION</li> <li>- HIGHER RESOLUTION OF MOTION SENSORS, WITH OVERLAPPING SENSOR FIELDS</li> </ul>	<ul style="list-style-type: none"> <li>- No site wiring or additional electrical infrastructure cost incurred in retrofit scenarios</li> <li>- Organic Response® is infinitely scalable, and can be used identically in small or large environments</li> </ul>	<ul style="list-style-type: none"> <li>- No complex, centralised control system to manage</li> </ul>	<ul style="list-style-type: none"> <li>- No further electronics control or communications infrastructure required on site</li> <li>- No additional design or commissioning required once luminaires installed</li> <li>- No sensor "blind spots" which need to be overcome</li> </ul>	<ul style="list-style-type: none"> <li>- "Plug &amp; Play" installation is as simple as that of a standard luminaire</li> <li>- No specific training required for installation</li> </ul>	<ul style="list-style-type: none"> <li>- Occupants are never left in the dark, or illuminated "interrogation style". They don't have to worry about timers turning off lights inappropriately, or being in a motion sensor "blind spot"</li> </ul>
	<b>AUTOMATICALLY RESPONDS TO OFFICE LAYOUT CHANGES</b>  <b>ADAPTABILITY</b> <ul style="list-style-type: none"> <li>- ORGANIC RESPONSE® CONTINUES TO WORK EFFECTIVELY EVEN IF, FOR EXAMPLE, PARTITIONS ARE ERECTED OR REMOVED, OR MEETING ROOMS ADDED</li> </ul>	<ul style="list-style-type: none"> <li>- Changes to office layout can be made without additional lighting control costs being incurred</li> </ul>	<ul style="list-style-type: none"> <li>- No need for new hardware, programming or commissioning if the office layout changes</li> <li>- Lower costs, reduced complexity</li> </ul>			
	<b>AMBIENT LIGHT DETECTION</b>  <b>DAYLIGHT DIMMING</b> <ul style="list-style-type: none"> <li>- EACH LUMINAIRE INDEPENDENTLY ADJUSTS FOR THE PRESENCE OF AMBIENT LIGHT IN ITS IMMEDIATE SURROUNDINGS, RESULTING IN ROBUST, STABLE AND EFFECTIVE DAYLIGHT DIMMING PERFORMANCE</li> </ul>	<ul style="list-style-type: none"> <li>- Energy savings maximised</li> </ul>	<ul style="list-style-type: none"> <li>- Energy savings maximised</li> </ul>	<ul style="list-style-type: none"> <li>- Optimal lighting for occupants</li> </ul>	<ul style="list-style-type: none"> <li>- Sensor architecture eliminates oscillations, simplifying implementation</li> </ul>	<ul style="list-style-type: none"> <li>- Optimal lighting comfort, reduced glare</li> </ul>
	<b>PRE-PROGRAMMED "MOOD" SETTINGS TO CHOOSE FROM</b>  <b>MOOD SETTING</b> <ul style="list-style-type: none"> <li>- MOODS DEFINE THE PRESET ILLUMINATION LEVELS AND DWELL TIMES APPROPRIATE TO DIFFERENT ENVIRONMENTS (E.G. CORRIDORS, OPEN OFFICE, PARKING GARAGES, ETC)</li> </ul>		<ul style="list-style-type: none"> <li>- Luminaire zones can be quickly and easily optimised without external expertise</li> </ul>	<ul style="list-style-type: none"> <li>- Built-in flexibility allows for effective lighting without additional design complexity</li> </ul>	<ul style="list-style-type: none"> <li>- Preset moods mean no separate commissioning required after installation</li> </ul>	<ul style="list-style-type: none"> <li>- Appropriate timing of transition from off-on/dim-bright</li> <li>- Optimal dwell times before dimming/turning off</li> </ul>
	<b>HIGHLY FLEXIBLE TASK LIGHTING CAPABILITY</b>  <b>TASK LIGHTING</b> <ul style="list-style-type: none"> <li>- EACH LIGHT CAN BE INDIVIDUALLY "TRIMMED" SO THAT THE LEVEL OF ILLUMINATION IS SUITED TO THE AREA THE LUMINAIRE IS SERVICING</li> <li>- AUTOMATIC LUMEN MAINTENANCE FUNCTION</li> </ul>	<ul style="list-style-type: none"> <li>- Energy savings maximised</li> </ul>	<ul style="list-style-type: none"> <li>- Energy savings maximised</li> <li>- Lower lighting maintenance costs</li> </ul>	<ul style="list-style-type: none"> <li>- Optimal lighting levels can be achieved for each specific location</li> <li>- Provides scope for creative lighting design effects, whilst enhancing energy efficiency</li> </ul>	<ul style="list-style-type: none"> <li>- Easy optimisation for your clients</li> </ul>	<ul style="list-style-type: none"> <li>- Optimal lighting levels across all work and transition areas</li> </ul>
	<b>SMART PHONE APP REMOTE CONTROL</b>  <b>APP CONTROL</b> <ul style="list-style-type: none"> <li>- ALLOWS USERS TO TRIM LIGHT LEVELS AND SET MOODS AND DWELL TIMES SIMPLY BY POINTING THE SMART PHONE REMOTE AT A LUMINAIRE'S SENSOR NODE</li> <li>- THE TARGET LUMINAIRE CAN REPROGRAM ALL OTHER LUMINAIRES USING THE INFRARED "RELAY CONFIGURATION" OPTION</li> </ul>	<ul style="list-style-type: none"> <li>- Tenants can manage aspects of lighting control quickly and easily, without needing to bring in external expertise</li> </ul>	<ul style="list-style-type: none"> <li>- Allows appropriate levels of authorisation for changes to mood settings</li> <li>- Tenants can effect appropriate changes themselves, without needing assistance</li> </ul>	<ul style="list-style-type: none"> <li>- Allows for easy configuration of lighting behaviour in different zones (e.g. open plan office, corridors, etc)</li> </ul>	<ul style="list-style-type: none"> <li>- Simple and easy to use, allows you to "set &amp; forget" any optimised settings</li> </ul>	<ul style="list-style-type: none"> <li>- Occupants can temporarily dim or brighten their own lights – which reverts back to the default mood setting when session is complete</li> </ul>

# ORGANIC RESPONSE<sup>®</sup> MAKES GOOD COMMERCIAL SENSE

DELIVERING ONGOING **ENERGY AND OPERATING COST SAVINGS** WELL BEYOND ITS PAYBACK PERIOD

## 1 SUPERIOR ENERGY SAVINGS



REDUCES **LIGHTING ENERGY COSTS** BY UP TO **70%**



**REDUCED** CARBON EMISSIONS



DELIVERS HIGHEST **ENVIRONMENTAL STAR RATINGS**

## 2 GREATER FLEXIBILITY & CREATIVITY IN LIGHTING DESIGN



**EFFORTLESS TASK LIGHTING** USING SMARTPHONE APP

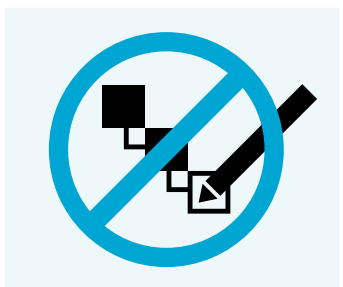


OPTIMISES **OCCUPANCY COMFORT**



**MAXIMISES** PRODUCTIVITY

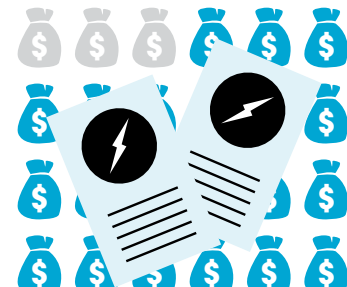
## 3 LOW PAYBACK PERIODS



VIRTUALLY **NO DESIGN OR COMMISSIONING REQUIRED**



**LOWER UP-FRONT** INSTALLATION COST



**SUPERIOR OPERATIONAL COST SAVINGS**

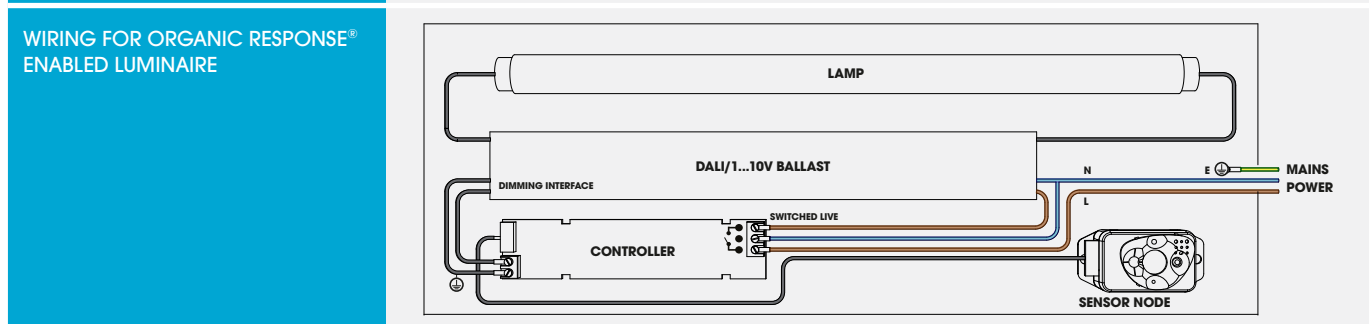


# Installing Organic Response® in your Building is Easy

<b>1</b>	<b>YOU DECIDE</b>	You decide you want Organic Response®.
<b>2</b>	<b>YOU SELECT</b>	You select your preferred lights and tell the manufacturer you want Organic Response® fitted.
<b>3</b>	<b>WE LIAISE</b>	We liaise with the lighting manufacturer to have Organic Response® integrated before delivery to you.
<b>4</b>	<b>ELECTRICIAN INSTALLS</b>	An electrician installs the Organic Response® enabled light fittings.
<b>5</b>	<b>YOU OPTIMISE</b>	You optimise the lighting (if required), using the smartphone app.

## Product Specification and Compliance

PRODUCT ENVIRONMENT FOR USE	Indoor areas, with maximum recommended ceiling height of 3.7m
SENSOR NODE DIMENSIONS	H: 24mm x L: 42mm x W: 28mm
POWER SUPPLY	100-240VAC, 50/60 Hz
AMBIENT TEMPERATURE (t <sub>a</sub> )	10°C ... 30°C
DEGREE OF PROTECTION	IP20 (when installed in a luminaire)
PROTECTION AGAINST CONTACT WITH LIVE PARTS	Provided by the luminaire
PROTECTION CLASS	I
LOAD CONTACT (S <sub>wL</sub> )	1 piece DALI/1...10V dimmable ballast, max current draw 500mA (120W maximum)
INTERNAL FUSE	1A slow blow (not connected to ballast load)
SENSOR NODE CONNECTION	Via supplied 8-way cable
EMC COMPLIANCE	AS/NZS CISPR15 (Australia) EN55015 Emissions, EN 61547 Immunity (Europe)
ELECTRICAL SAFETY COMPLIANCE	AS/NZS 61347.2.11 -2003 (Australia) EN 61347.2.11 (Europe)
FIELD SERVICEABLE PARTS	None





**Organic Response**<sup>®</sup> would be delighted to have a chat with you. Call us, and we'll send one of our advisors to your site, or put you in touch with an Organic Response<sup>®</sup> affiliated lighting engineer serving your area.

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