# Choosing a Lighting Control Solution

Organic Response Vs. DALI

EAGLE
LIGHTING

# Eagle Lighting

Eagle Lighting leverage the latest science and technology to develop energy-efficient luminaires that enhance occupant vision, wellbeing and performance.

Using Organic Response powered luminaires with integrated controls, the installation of the luminaire is simplified and can remove the consideration of local wall switches and other PIR sensors.

Whether it's personalised lighting for an office space, different light levels for a classroom or creating a dynamic retail space through presence detectors, Eagle Lighting knows your controls and connectivity requirements.

## Introduction

As the technology of all traditional building systems has evolved, so too has lighting control.

Traditional cabled systems are being rapidly replaced by more intelligent and responsive wireless systems.

The purpose of this document is to compare the traditional DALI cabled lighting control systems, with the intelligent wireless solution of Organic Response.

# Core Lighting Control Functions

Set maximum and minimum lighting levels and in consideration of natural daylight contribution.

Deliver the correct lighting levels to the applications prescribed in both the Australian and New Zealand Lighting Standards.

Ensure that the required artificial lighting is ON when an area is occupied, and be OFF when the space is unoccupied.

Allow automation to be overridden by way of dimming for specific scenes or presets, with local control panels or apps.

Ability to monitor lighting, maintenance and reporting from a cloud connection.

Quantifiably measure energy efficiency and prolong luminaire life.

# DALI Cabled

## Automatic Lighting Control Systems (ALCS)

DALI remains a strong standardised protocol for how we dim or control lights digitally.

In terms of supervisory controls, there are more complex design, implementation and lifecycle considerations when working with DALI.

This is compounded by:

- The need for specialist systems integrators to commission the DALI device addressing and the ALCS hardware.

- The extra ongoing costs of DALI become quite onerous for building owners and can be disruptive for the tenants and occupants.

As SMART-connected design concepts span more classifications of buildings, sensor density becomes a key design element.

Legacy DALI designs typically tether upwards of eight lights per one motion sensor. Cabling, hardware and the maximum of 64 devices per DALI line, limits DALI control systems from meeting the density and bandwidth that Wireless Peer to Peer solutions achieve natively and with economies of scale.

# Organic Response

## A completely intelligent, scalable & wireless Lighting Control solution

- Immediate lighting and control that results in a digital-ready ceiling

- A saving of time and money in design, installation and in maintenance life cycle of the building .

- Local design & manufacturing, Australian innovation and support.

- A truly intelligent, wireless and extensible system unconstrained from the traditional DALI design and cabling limitations.

- Significantly less 'points of failure.' One device for light and control.

- A proven technology in its third evolution of product development backed by Fagerhult; a tier 1 global lighting manufacturer.

- Electrical contractor, facility manager and tenant friendly. Intelligent lighting control delivered intuitively.

- The ability to create digital spaces comprising a sensor rich density that is cloud connected with an open API architecture.

Install today, ready for tomorrow

## The Eagle Lighting With Organic Response (OR) Value Proposition:

The OR solution delivers a cost effective best-in-class lighting and control system, that is user and maintenance friendly, with a connectivity SMART ready provision.

**organic response**

# Choosing your Control

## Controls

| | | OR Controls Out of the Box | OR Controls IoT Connected | DALI Cabled Controls |
|---|---|:---:|:---:|:---:|
| | Plug & Play | ● | ● | |
| | Wireless | ● | ● | |
| | Intuitive App | ● | ● | |
| | Wireless Wall Switch | ● | ● | |
| | Min/Max Levels | ● | ● | ● |
| | Daylight Harvesting | ● | ● | ● |
| | Occupancy Sensor | ● | ● | ● |
| | Tuneable White | ● | ● | |

## Connected

| | | OR Controls Out of the Box | OR Controls IoT Connected | DALI Cabled Controls |
|---|---|:---:|:---:|:---:|
| | Scheduling | | ● | ● |
| | Location / Tracking - BLE Beacons | | ● | |
| | Portal Head Mapping | | ● | |
| | Open API | | ● | |
| | Centralised Operations | | ● | ● |
| | Reporting & Maintenance | | ● | ● |
| | High Level BMS | | ● | ● |
| | High Level Integration | | ● | |
| | Feature Upgradable Over The Air | | ● | |
| | Circadian 24/7 Auto | | ● Coming Q3 2022 | |
| | Ambient Temperature | | ● Coming Q3 2022 | |
| | Humidity | | ● Coming Q3 2022 | |
| | $CO_2$ | | ● Coming Q3 2022 | |
| | TVOC | | ● Coming Q3 2022 | |

Note: TVOC, $CO_2$, Humidity and Ambient Temp measurements are derived from Over Mesh BLE devices

# What is a Digital Ceiling?

# Open API

Building owners and tenants have the freedom to use the Organic Response Digital Ceiling to best suit their needs.

A building owner or facility manager may engage third-party solution vendors to develop custom applications, dashboards and analytics such as:

- Enhanced HVAC and security, through greater granularity sensor and floor position.

- Sensor dense rich occupancy data, extracted by data science building applications

- Restful API - bespoke and emerging applications.

A tenant may seek to implement or complement other applications to become safer, more agile or efficient with space allocation, such as:

- BLE Asset Tracking

- Room booking systems

- Indoor wayfinding

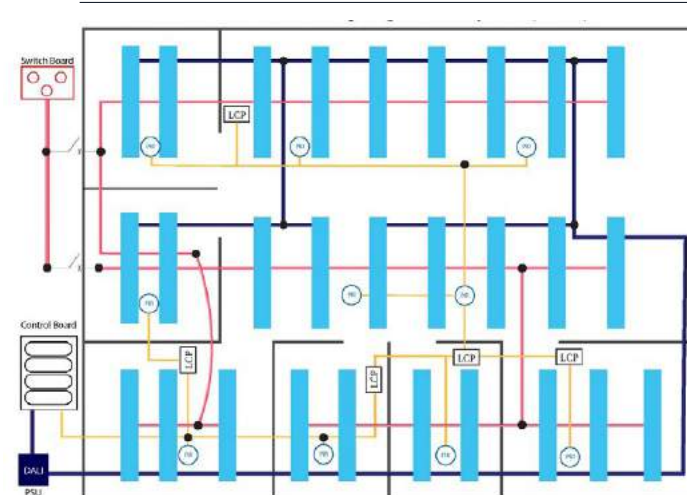Interoperability of building systems has emerged as one of today's essential value-adds.

Open API's have challenged the traditional building systems like BMS, HVAC and DALI, that ultimately kept building owners tethered to their cabled architectures and ongoing vendor-specific service packages.
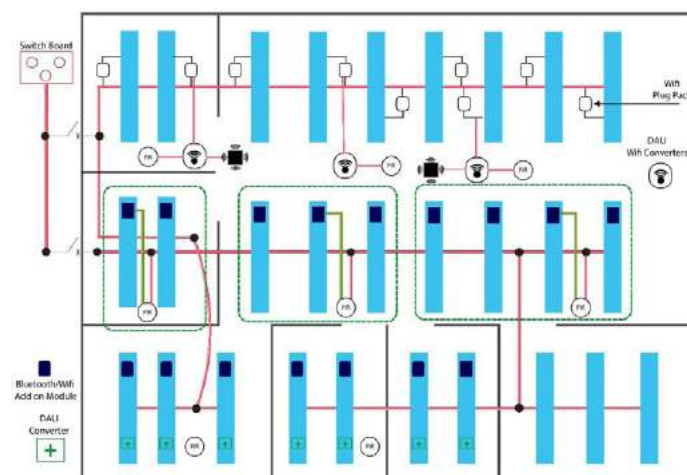
# Cabled Systems

Why pay more
to install legacy?
Why keep paying
more in lifecycle?

Cabled DALI - Automatic Lighting Control System



Or with cabled
systems becoming
part wireless.
Who honours
the warranty?
Who supports the
solution?

Various Wireless - Bluetooth Hybrid Controls???

# Organic Response

Invest in the
proven and
trusted solution
of Eagle with OR
inside

Eagle Lighting with Organic Response Controls Inside
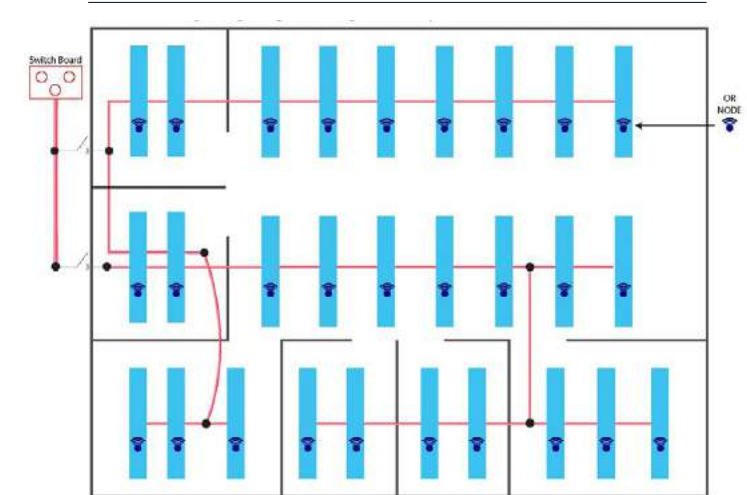
# Costing Comparison

## Organic Response Vs. Legacy Cabled DALI Control

|  | Legacy DALI Cabled Network Lighting Control System | Integrated and or Detached Nodes |
|---|---|---|
| Number of PIR/PE Sensors | 66 | 251 |
| Cost per m$^2$ | $10.16 | $8.54 |
| **Total Cost** | **$21,435** | **$17,945** |

| Indicative savings using OR Control | $2,500 - $3,500 per floor |
|---|---|

\* Based on a typical 2000m2 open floor office layout, using daylight harvesting on perimeter row luminaires.

For legacy DALI sensors to achieve the same sensor density as OR, would conservatively cost an additional **$23,000**

Noting these sensors will only extend the PIR & PE functionality, lacking the information and bandwidth of data that the OR nodes provide natively.

**Plus with OR you get a Digital Ceiling**

*\*\*Note These figures are indicative and can vary subject to any number of project variables. Based on robust project dialogue with various electrical contractors across Australia, it is reasonable to promote the use of OR controls can achieve in the order of 18+ % savings compared with other solutions.*

# The Eagle Solution

Why pay more for a legacy control solution that has less sensor density, is tethered to centralised cabling and head end architectures, and has hardware-heavy requirements?

## Contact us today

### Eagle Lighting provides:

- Great lighting.
- Intelligent controls that are easy to Install.
- An intuitive system that is easy to adjust and maintain.
- No ongoing costs associated with specialist system Integrators.

### With the added benefit of a Digital Ceiling:

- Has connectivity at its core.
- Is SMART ready for today or tomorrow.
- Doesn't lock you into any ongoing licence or subscription fees, or SaaS agreement.

Eagle Lighting offers a variety of lighting control options. Let's discuss your controls and connectivity requirements and find the right one for your project.

Selecting intelligent wireless controls in design isn't about being ahead of the curve; the future has already happened.

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A Fagerhult Group Company

## Contact us today

https://eagle.lighting
eagle@eaglelighting.com.au

## Australia

**Vic (Head Office)**
17-19 Jets Court
Melbourne Airport 3045
(03) 9344 7444

**NSW**
Level 1, 71-73 Alexander St
Crows Nest 2065
(02) 9420 5799

**QLD**
53 Caswell Street
East Brisbane 4169
(07) 3891 0744

**ACT**
0411 889 406

**WA (Distributor)**
H.I.Lighting
(08) 9377 1322

**SA (Distributor)**
Buckford Illumination Group
0448 064 412

**TAS (Distributor)**
Southern Lighting
(03) 6231 5599

## New Zealand

**Auckland (Head Office)**
Ground Floor,
82 Wyndham Street
Auckland Central 1010
0800 324 374

**Wellington**
021 597 900

**Christchurch**
Unit 4
107 Wrights Road
Christchurch 8024
021 655 609