

A photograph of a modern building facade at night. The building has a large glass window area with a grid pattern. The OSRAM logo is illuminated in orange on the glass. The interior lights of the building are visible through the glass, and the sky is dark blue.

# OSRAM Light Management System

## 歐司朗燈光管理系統簡介

Max Hung | Jan 2015 | Taipei  
Light is OSRAM



# Agenda

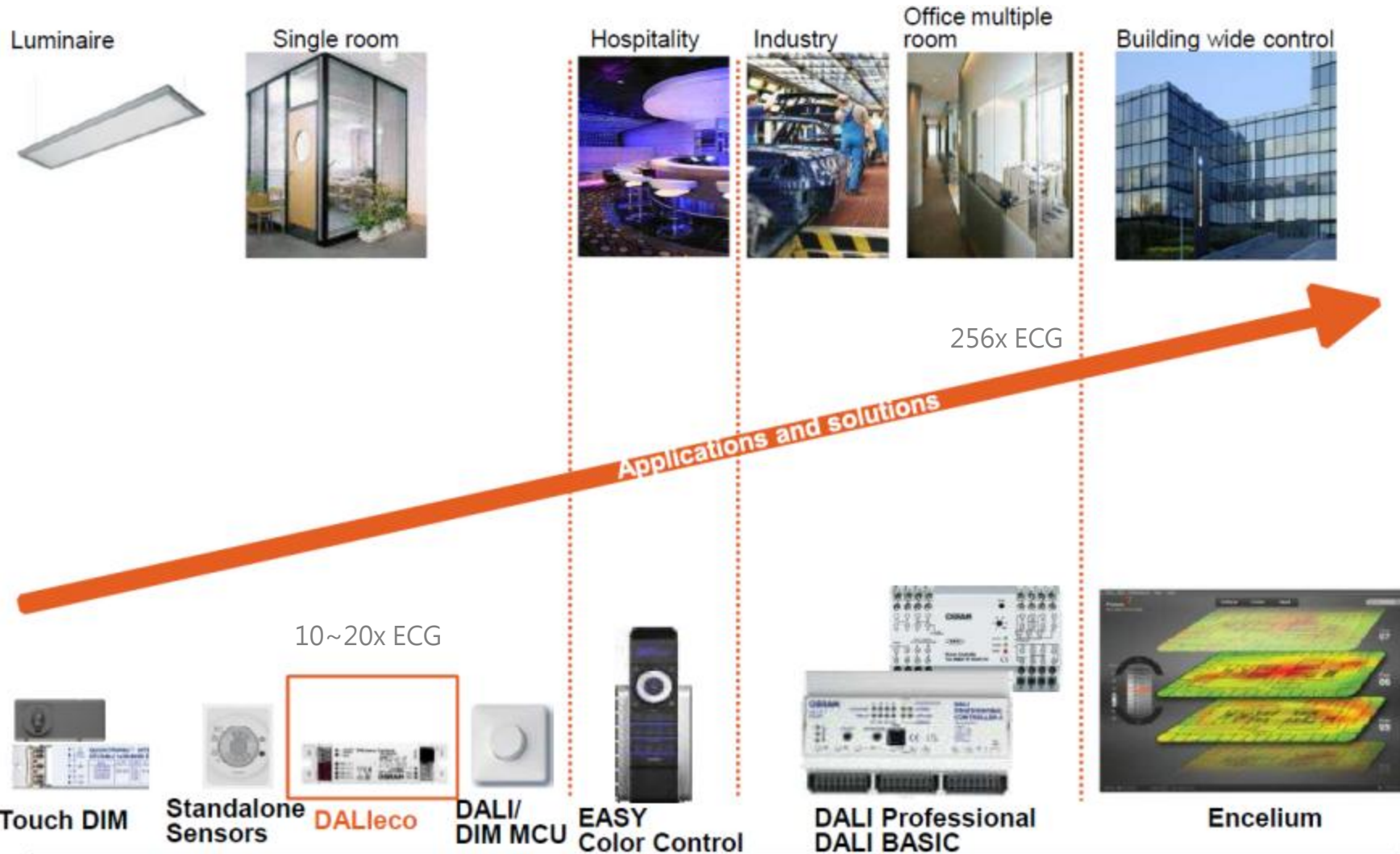
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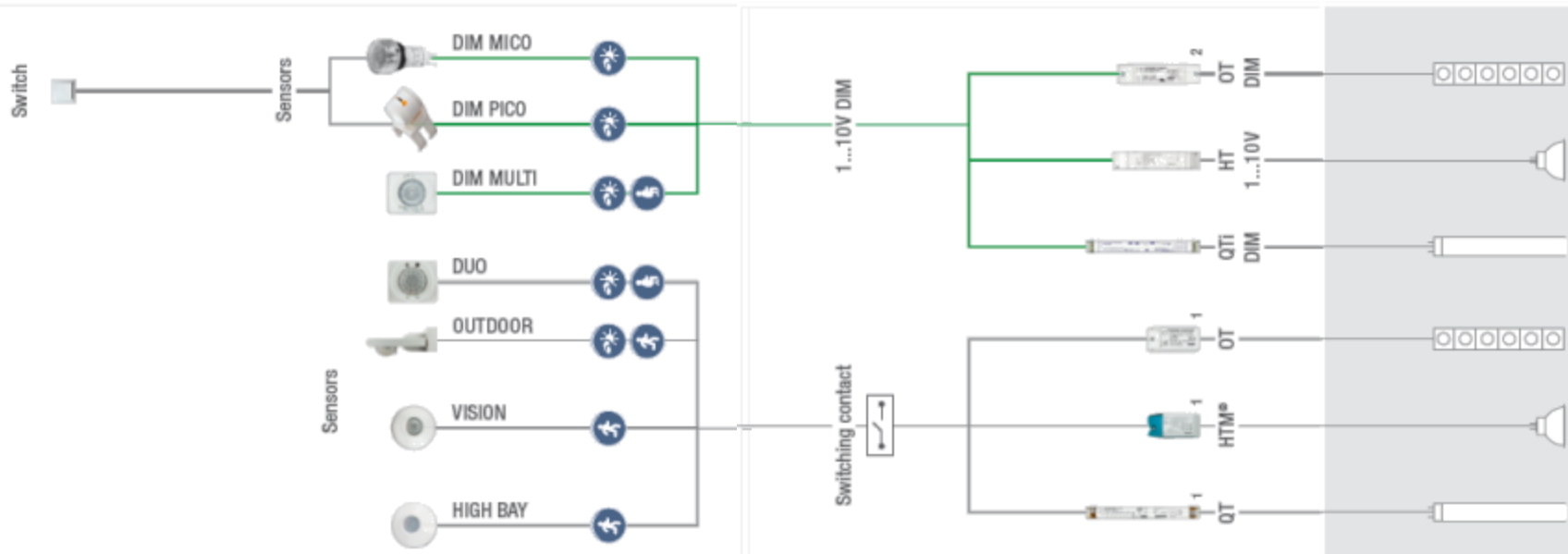
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# OSRAM Light Control System Portfolio Overview

## 商用空間燈控解決方案



# Stand-alone Sensors 系統圖



最基本的節能系統。感測器偵測日光及動態可以自動開啟/關閉/調節照明燈光。  
適當的配置可以達成70%照明節能。

適用場所: 辦公室、等候區、會議室、長走廊、休息室、大廳、廁所、廠房、倉儲



# Stand-alone Sensors

## DIM MULTI – 光線&動態偵測 支援調光

### DIM MULTI

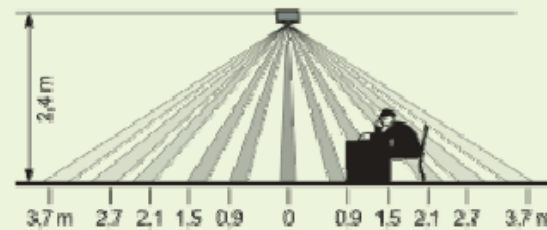


#### Product features

##### Light & presence sensor

- Sensor for daylight-dependent and presence-dependent control
- Surface mounting or simple clip-on installation for fluorescent lamps
- Daylight or presence detection only, daylight and presence detection
- Up to 30 ECGs can be connected, sensors can be networked

- Set point calibration via Push Button
- Approx. 110° detection angle, detection area max. Ø 12 m
- Full- / Semi-automatic mode selectable via DIP switches
- Reflectance value of light detection fine adjustable via Poti





# Stand-alone Sensors

## DUO - 光線&動態偵測 非調光

→ Energy-saving solution for non-dimmable luminaires / light systems

### Concept:

- Daylight- and presence detection
- Switching power supply with stand-by consumption of < 0,45W
  - Direct switch contact
  - Delay time adjustable between 1 – 60 min
- Selectable operation modes → daylight detection only, daylight- and presence detection
  - Up to 20 ECG switchable

### Features:

- **energy-saving** → up to 45% energy-saving potential
- **energy-efficient** → < 0,45W stand-by consumption
- **flexible** → on-wall mounting or direct luminaire integration via T5/T8 lamp clip
- **easy** → all functions adjustable with rotary controls on the front side of the sensor
- **cost-oriented** → maintenance-free and low installation costs due to on-wall or lamp clip mounting

DUO sensor



### Application:

- Office
- Residential
- Hospitality
- Retail & Shop
- Industrial

# Stand-alone Sensors

## HIGHBAY –光線&動態偵測 高天井適用

→ Simple light control for high ceiling installation up to 13m

### Product description:

- Movement detection with the use of PIR technology
- Application areas dependent on installation height:
  - 3 - 10m: Detection of large motion (e.g. walking)
  - 10 - 13m: Detection of very large motion (e.g. forklifts)
- Large detection area of Ø18m at 10m ceiling height
  - 360° lense detection angle
  - Delay time adjustable between 30 sec - 20 min

### Sales arguments / Product benefit:

- **energy-saving** → up to 45% energy-saving potential (in combination with daylight detection)
- **energy-efficient** → < 0,25W stand-by consumption
  - **flexible** → operating area between 3 – 13m
- **simple useability** → easy installation with all-purpose adapter
- **cost-oriented** → maintenance-free and low installation costs due to on-wall mounting

HIGH BAY sensor



### Application:

- Industrial
- Hospitality
- Residential



# Stand-alone Sensors

## OUTDOOR - 光線&動態偵測 戶外專用

→ Outdoor light management useable for wall & ceiling installation

### Product description:

- Daylight- and presence detection
- Detection area up to Ø 16m
- 290° lens detection angle
- Delay time (5sec-30min) adjustable
- Twilight sensor from 1 lux
- Outdoor useability guaranteed due to IP55 classification

### Sales arguments / Product benefit:

- application-oriented → detection area modifiable +/- 30° by turning the lens
- comfortable → 2 button operation to select the different sensor functions
- flexible → rotatable sensor arm for individual wall or ceiling installation
- cost-oriented → maintenance-free and low installation costs due to on-wall / on-ceiling mounting

OUTDOOR  
sensor



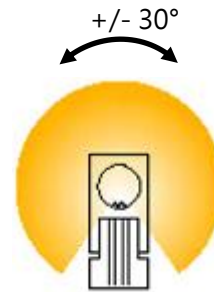
### Application:

- Outdoor applications like:
  - Building outskirts area
  - Parking area
  - Garage
  - Tool shed

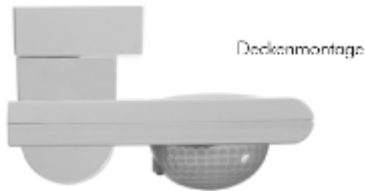
# Stand-alone Sensors OUTDOOR –cont'

## Presence detection:

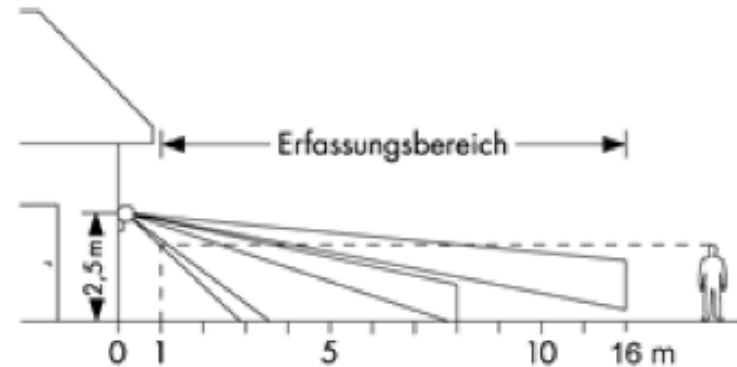
Lens detection angle: 290°  
(+/- 30° modifiable)



Installation options:



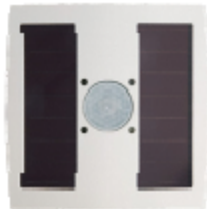
Presence detection:  
→ up to Ø 16m  
(at 2,5m installation height)



# Stand-alone Sensors

## 無線Sensor & 接收器 - 光線&動態偵測

### SOLAR



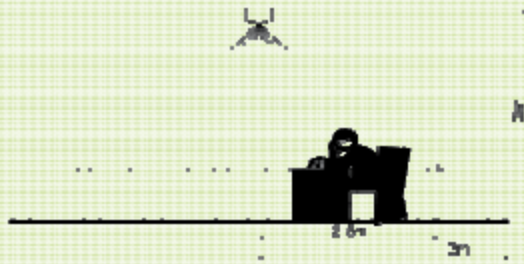
### SWITCH RC



### Product features

#### Light & presence sensor

- Suitable for flexible and cable/less installations (e. g. offices, historic buildings)
- No cables, no batteries: Maintenance-free EnOcean radio technology
- Radio range up to 30 m (up to 5 walls) or 100 m (no walls)
- Approx. 100° detection angle, detection area: max.  $\varnothing$  9 m



#### 1-channel radio receiver

- Suitable for all OSRAM control elements and sensors with EnOcean radio technology
- Choice of 5 different operating modes
- Adjustable switch-off delay: 1 to 20 min
- Range: up to 30 m (up to 5 walls) or 100 m (no walls)
- Frequency band: 868.3 MHz
- Up to 8 sensors and 8 wall-mounted/hand-held transmitters can be trained
- Up to 14 ECGs can be connected

RC = Receiver

# Stand-alone Sensors

## VISION -動態偵測 專為適合大面積&長走道設計

→ Motion detection for large areas and long corridors

### Product description:

- Motion detection based on PIR technology
- Detection area up to Ø21m
- Installation height up to 4,5m
- 360° lens detection angle
- Operating temperature -10 ... +70°C
- Delay time (30sec-20min) adjustable

### Sales arguments / Product benefit:

- energy-saving → up to 45% energy-saving potential (in combination with daylight detection)
- energy-efficient → < 0,25W stand-by consumption
- comfortable → 1 button operation to adjust delay time
- simple useability → easy installation with all-purpose adapter
- cost-oriented → maintenance-free and low installation costs due to on-wall mounting

VISION sensor



### Application:

- Large area applications like:
  - Depot / Warehouse
  - Supermarket
  - Corridor

# Stand-alone Sensors

## 牆面Sensor - 光線&動態偵測 適合梯間、會議室

→ The „contactless and full-automatic light switch “

### Concept:

- Daylight and presence detection
- Detection area:  $r = 8\text{m}$
- Detection angle:  $180^\circ$  horizontal /  $70^\circ$  vertical
- Delay time (up to 30 min) adjustable
- Light level (20 - 1000 Lux) adjustable
- Selectable operation modes → Timer short/long, stairwell, constant light
- Up to 14 ECG controllable

### Features:

- **energy-saving** → up to 45% energy-saving potential
- **applicable** → stairwell functionality, timer functionality, constant light functionality
- **comfortable** → contactless light switch with individual settings
- **flexible** → multiple sensor connection and use of conventional light switches possible
- **simple useability** → installation in standard in-wall boxes

WALL SWITCH sensor



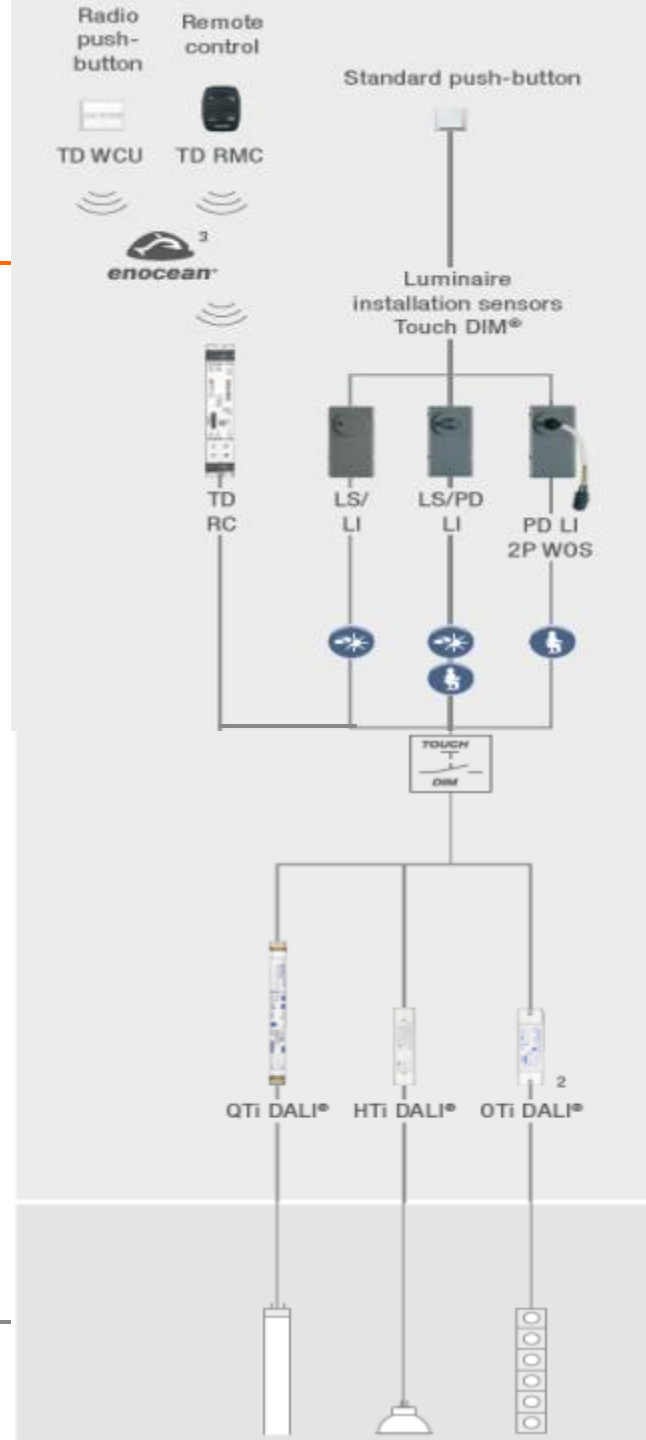
### Application:

- Office
- Residential
- Hospitality
- Retail & Shop
- Industrial

# Touch DIM 系統圖

Touch DIM是DALI安定器內建的調光功能，可藉由牆面遙控開關或是支援Touch DIM的感測器直接對DALI燈具作調光控制。感測器偵測日光及動態可以自動開啟/關閉/調節照明燈光。

適用場所: 1~15個DALI燈具配置的較小空間。支援無線遙控開關適合不能配線的空間裝潢。





# Touch DIM

## 安裝於燈具的Sensor

TD LS LI



TD LS/PD LI



### Product features

#### Light sensor, luminaire installation

- Signal line length: max. 10 m
- Power draft: max 0.5 W
- A set point for daylight-dependent control can be stored by double clicking
- Operated via standard switches
- Up to 4 QT<sub>i</sub> DALI<sup>®</sup> ECGs or 4 HT<sub>i</sub> DALI<sup>®</sup> ECGs or 4 OT<sub>i</sub> DALI<sup>®</sup> ECGs can be connected

*LS = Light sensor, LI = Luminaire installation*

#### Light & presence sensor, luminaire installation

- Can also operate purely as a presence sensor
- Signal line length: max. 10 m
- Power draw: max. 0.5 W
- A set point for daylight-dependent control can be stored by double clicking
- Operated via standard switches
- Up to 4 QT<sub>i</sub> DALI<sup>®</sup> ECGs or 4 HT<sub>i</sub> DALI<sup>®</sup> ECGs or 4 OT<sub>i</sub> DALI<sup>®</sup> ECGs can be connected

*LS = Light sensor, PD = Presence detection, LI = Luminaire installation*

# Touch DIM

安裝於燈具的Sensor可搭配不同感測範圍的接收器

TD PD LI 2P WOS

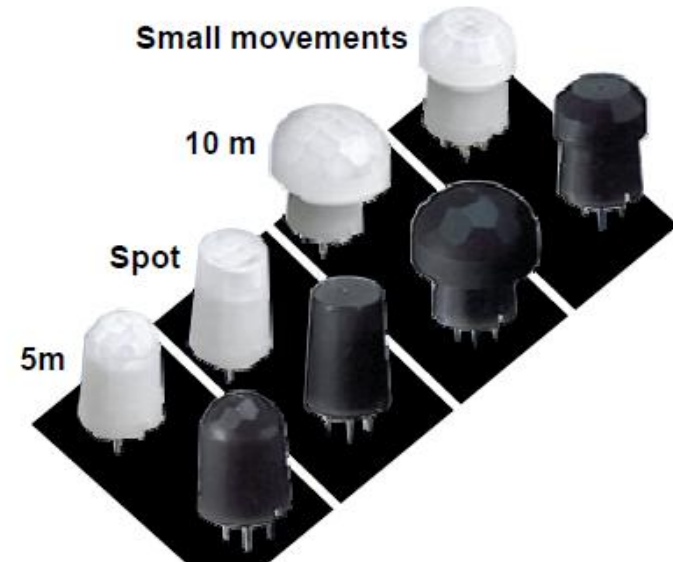
**\* NEW \***



## Product features

### Presence sensor, luminaire installation

- Sensor head extension length: 25 cm
- 4 sensor types available: 5m / 10m / Spot / Small movements
- Signal line length: max. 10 m
- Power consumption: max. 0.5 W
- Operated via standard switches
- Up to 4 QT<sub>i</sub> DALI<sup>®</sup> ECGs or 4 HT<sub>i</sub> DALI<sup>®</sup> ECGs or 4 OT<sub>i</sub> DALI<sup>®</sup> ECGs can be connected



PD = Presence detection, LI = Luminaire installation,  
2P = 2-parts, WOS = w/o sensor

# Touch DIM 系統圖

## TD WCU



## TD RMC



### Product features

#### 2-channel radio switch

- Battery-less radio switch for up to 2 lighting groups
- Dimming without a control line by means of maintenance-free radio technology
- Frequency band: 868.3 MHz
- Output power: 10 mW
- Battery-less operation thanks to inductive power generation

WCU = Wall control unit

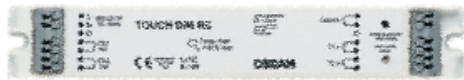
#### 4-channel radio remote control

- Battery-less radio remote control for up to 4 lighting groups
- Dimming without a control line by means of maintenance-free radio technology
- Frequency band: 868.3 MHz
- Output power: 10 mW
- Battery-less operation thanks to inductive power generation

RMC = Remote control

# Touch DIM 系統圖

## TD RC



## SWITCH RC



### Product features

#### 2-channel radio receiver

- Radio receiver for battery-less EnOcean radio switches for 2 lighting groups
- Dimming without a control line by means of maintenance-free radio technology
- Power draw: max. 1.5 W
- Frequency band: 868.3 MHz
- 2 floating semiconductor relay outputs max. 45 mA/240 V
- Up to 15 QT<sub>i</sub> DALI<sup>®</sup> ECGs, OT<sub>i</sub> DALI<sup>®</sup> ECGs or HT<sub>i</sub> transformers can be connected per output
- Up to 30 wall transmitters can be trained

RC = Receiver

#### 1-channel radio receiver

- Suitable for all OSRAM control elements and sensors with EnOcean radio technology
- Choice of 5 different operating modes
- Adjustable switch-off delay: 1 to 20 min
- Range: up to 30 m (up to 5 walls) or 100 m (no walls)
- Frequency band: 868.3 MHz
- Up to 8 sensors and 8 wall-mounted/hand-held transmitters can be trained
- Up to 14 ECGs can be connected

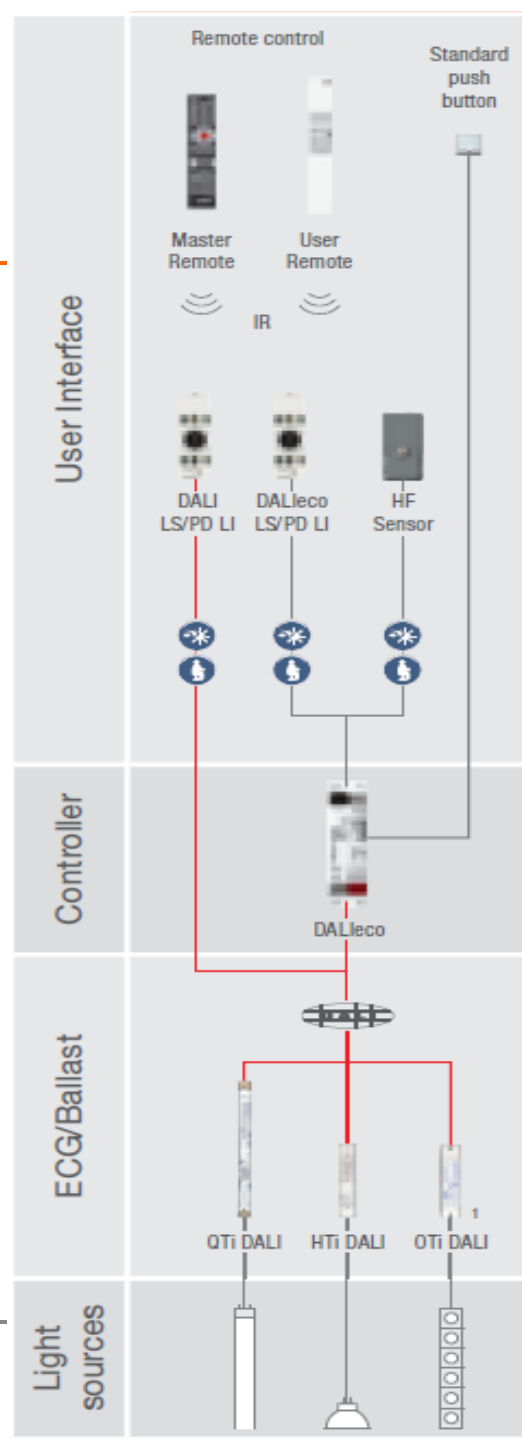
RC = Receiver

# DAIeco

## 系統圖 適合完全DALI燈具環境

DAIeco 控制器支援2 Ch.最高32個**DALI安定器**、10個Sensors、大量牆面開關。  
可用於燈具數量較多的商用空間

適用場所: 多人辦公室、教室、會議室、  
長走廊、休息室、大廳、廁所、廠房、倉儲



# DALIeco

## 適用空間及地點

One system for different applications

- Floor standing fixtures
- Single office / Open plan office
- Class room / meeting room
- Corridor / Staircase / Recreation rooms

### Industry :

- Corridor lighting
- IP protected fixtures





# DALIeco

## DALIeco 主控制器支援雙通道

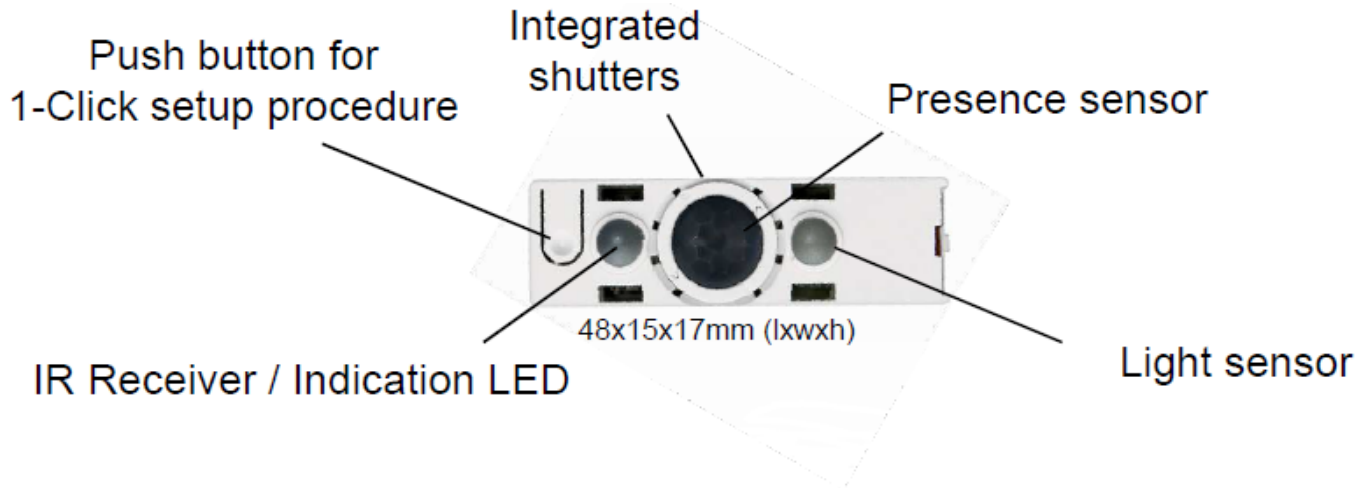


118x30x21mm (lwxh)



- VDE & VDE EMC certified system for facile luminaire approbation
- Up to **32 ECG controllable**
- Standby-by power (w/o ECG) only **200mW**, suitable for Minergie certified luminaires
- 2 DALI outputs with **variable offset**
- Plug & play connection of up to for 4 sensors + 6 extension sensors via DALI
- Push button connection for central dimming and switching of both channels
- **Independent mounting** outside of the luminaire via Eco CI Kit
- **System with best price / performance on the market !**

# DALIeco Passive IR Sensor



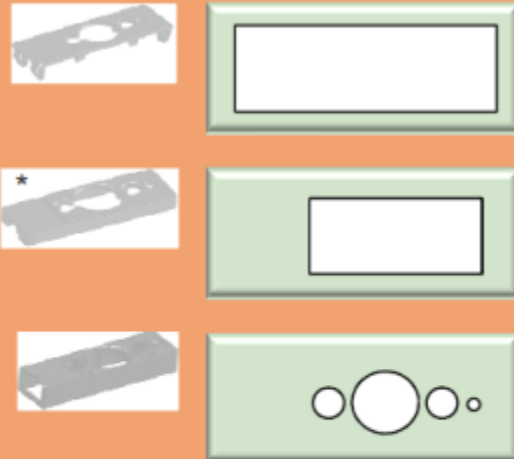
- Mounting height 2m...5m
- Detection area up to  $\varnothing$  6m
- Light sensor range of operation 20-800lx (Measured at the sensor)
- IR receiver can be deactivated via the integrated push button

# DALIeco

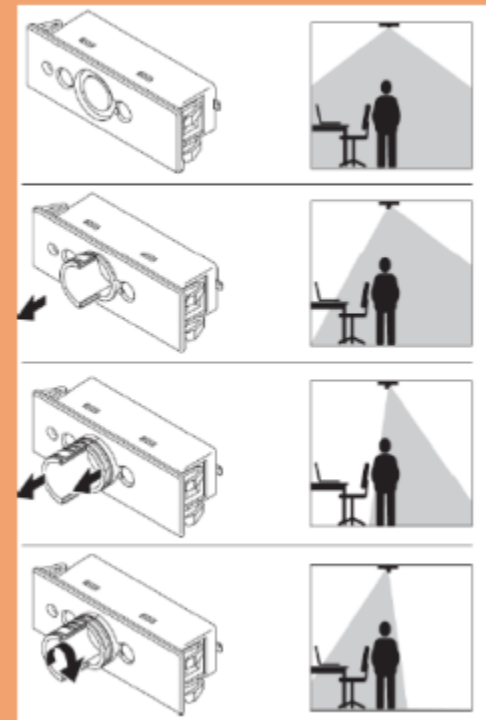
## PIR Sensor – 可調整感應範圍及方向



### Different mounting options for an individual luminaire design

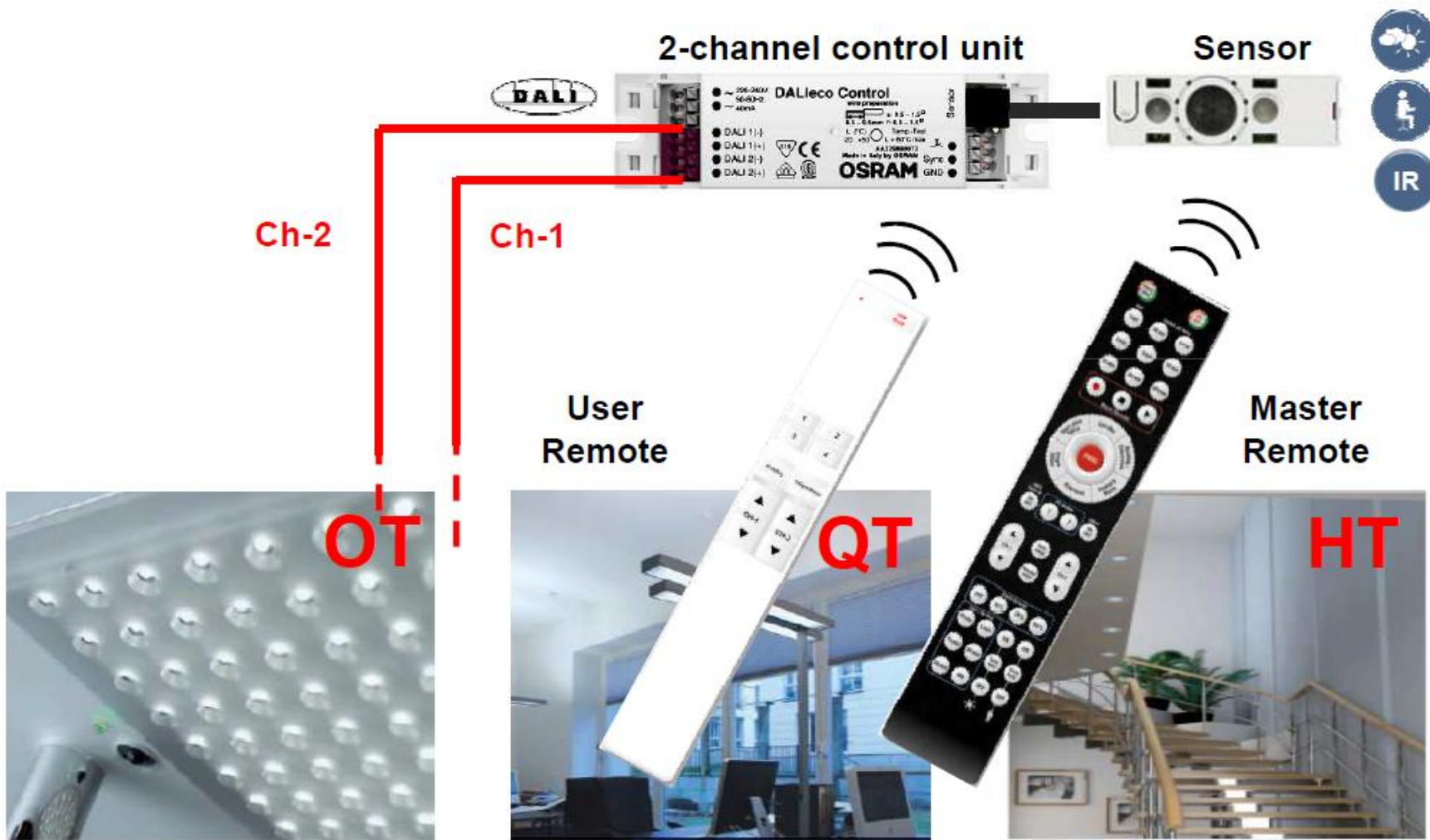


### Integrated shutters for restriction of detection area



# DALIeco

## 透過無線遙控達成調光需求



# DALIeco

## HF LS LI Radar Sensor 雷達感應日光/動態偵測科技

### Advantage

日光/動態Sensor可獨立啟閉  
可調整動態感測範圍  
可安裝於IP防水燈具內  
內建振動感應降低誤作動機率  
適用-20°C~50°C

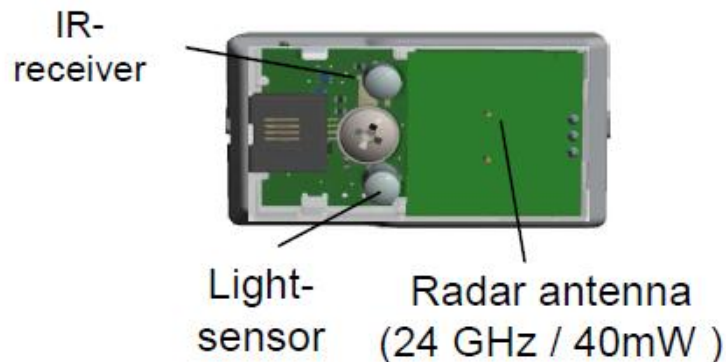
### Product Properties

雷達反射原理偵測物體動態  
雙色LED  
最大物體動態偵測範圍: 人15M、車輛25M  
支援IR遙控器  
RJ10電源接口

### 應用

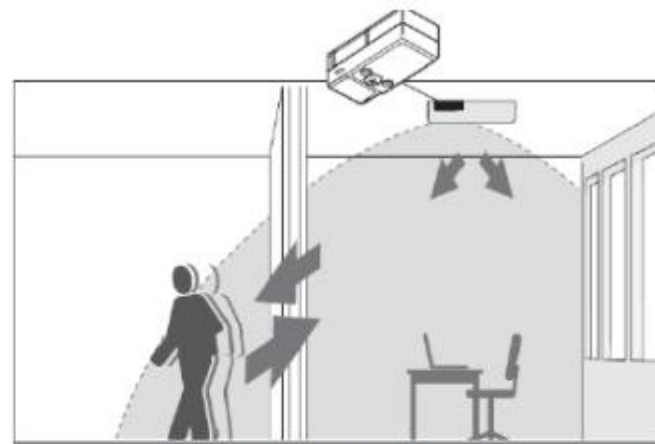
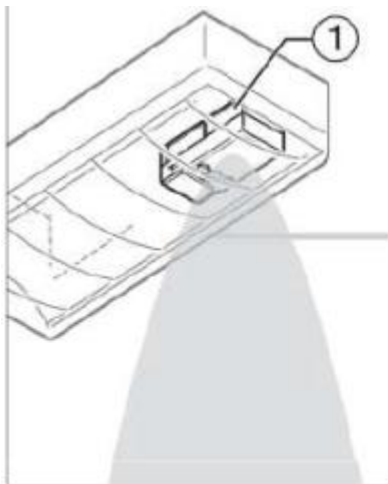
商用燈具及工業燈具  
支援DALIeco/DALI Pro/WAGO DALI/SIEMENS  
DALI

### Sensor elements

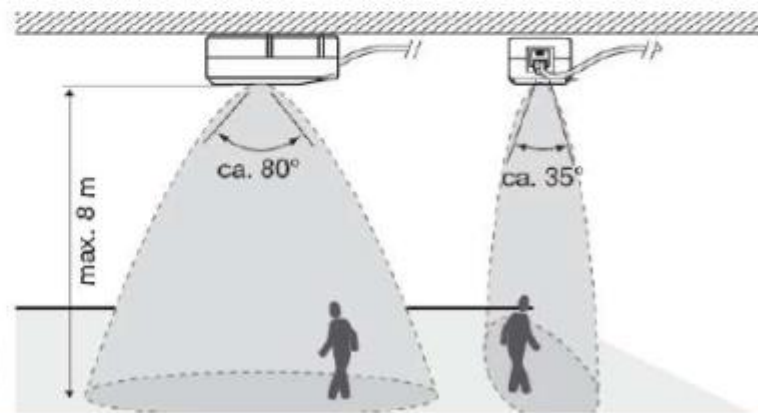
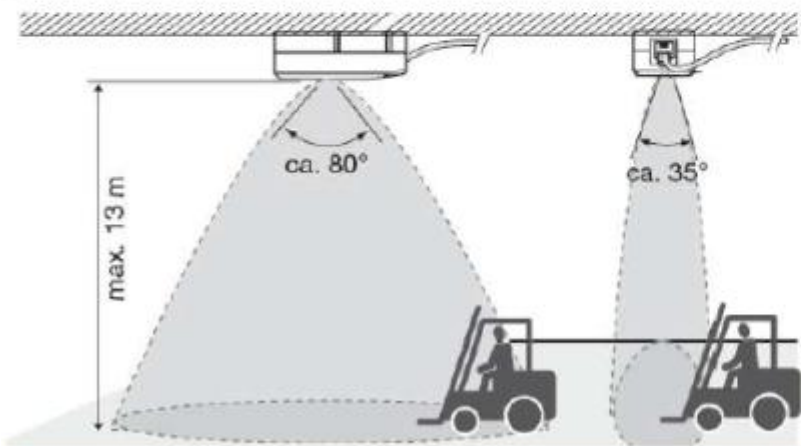


# DALIeco

## HF LS LI Radar Sensor 安裝於IP防水燈具內



Radar Signal durchdringt Leichtbauwände!

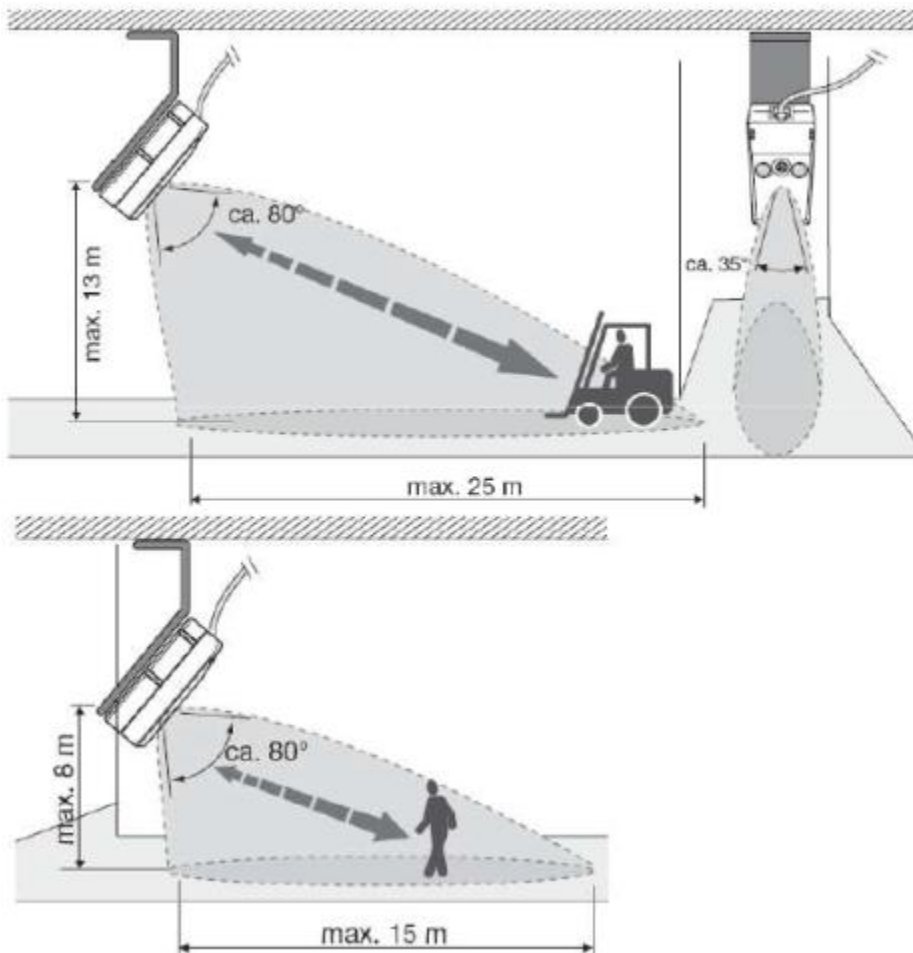


Closed loop control possible ↔ limited regulation speed



# DALIeco

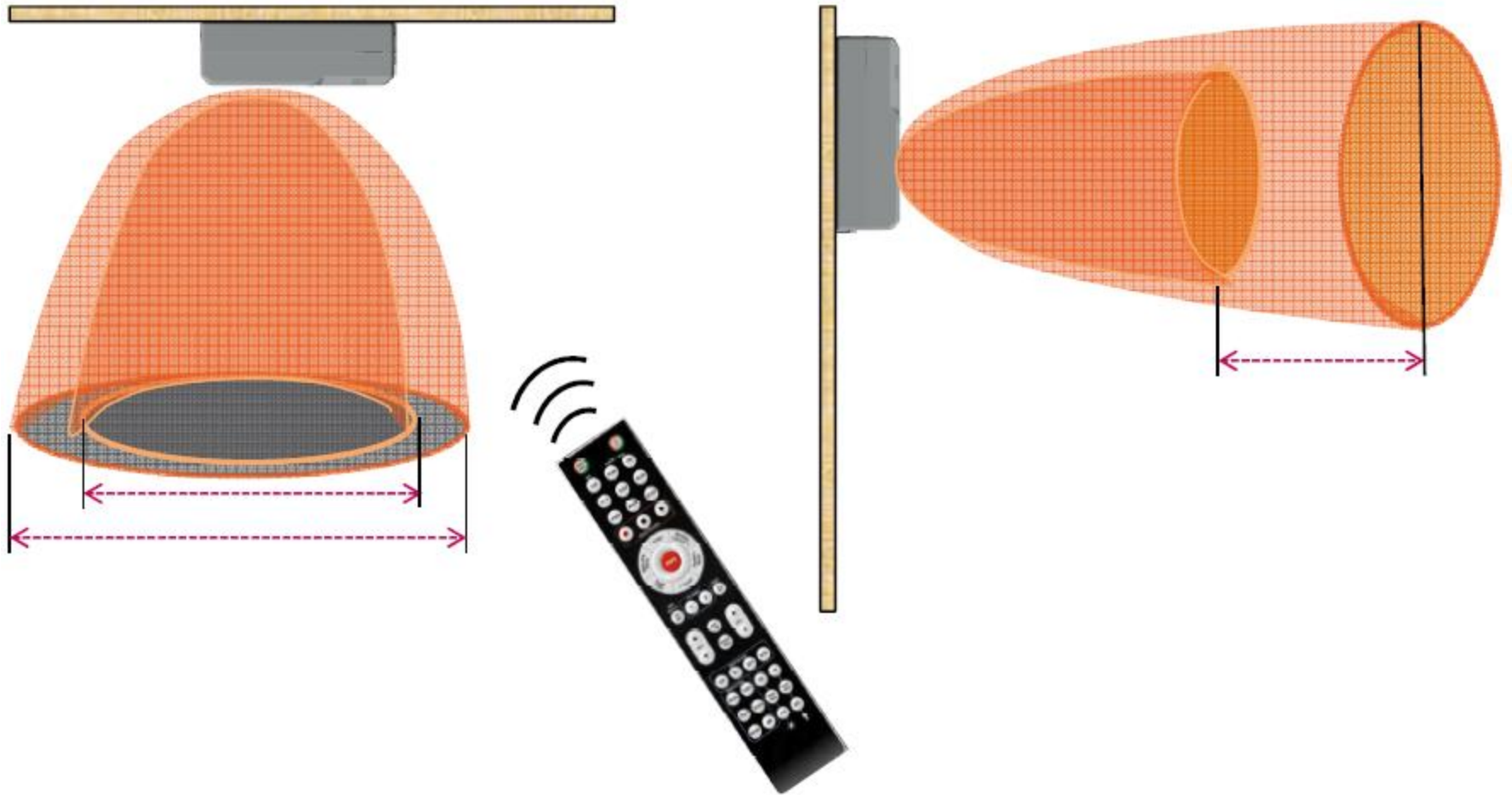
## HF LS LI Radar Sensor 應用於長走道



1. High detection range
2. **No** closed loop control

# DALIeco

## HF LS LI Radar Sensor 可調整偵測距離



# DALIeco

## HF LS LI Radar Sensor 偵測人體溫度遠比PIR準確

Without jacket and cap



With jacket and cap



# DALIeco

## HF LS LI Radar Sensor 應用於冷凍庫防水燈具內

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標準版產品可應用於-20°C~50°C環境，訂製版本可適用於-25°C環境

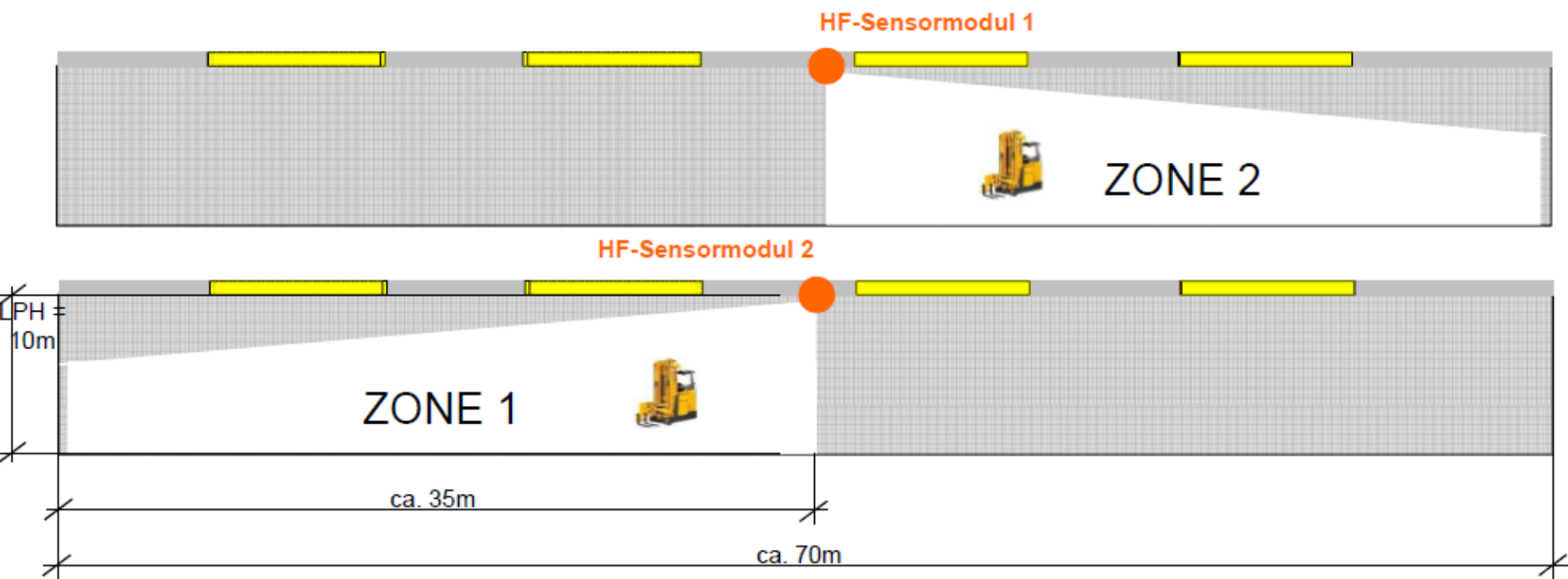
# DALIeco

## HF LS LI Radar Sensor 有效偵測動態車輛排氣溫度



# DALIeco

## HF LS LI Radar Sensor 應用於倉儲廠房長走道

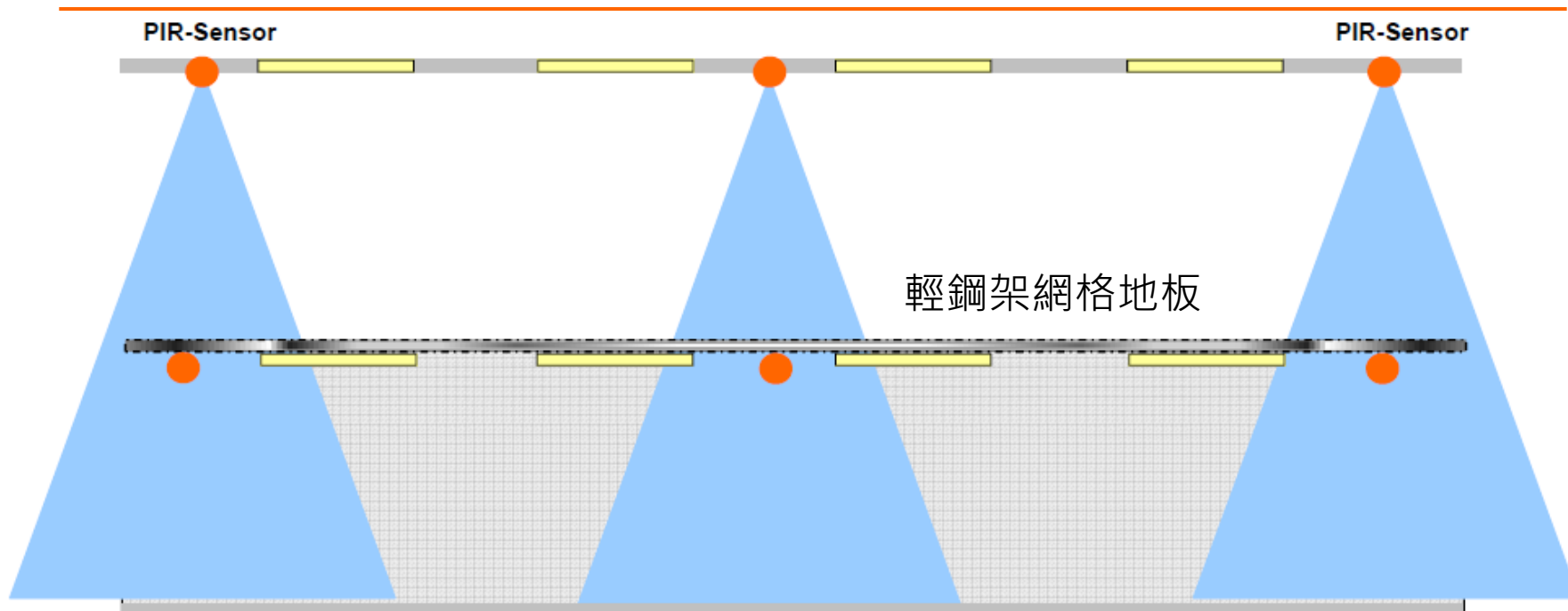


- 有效分隔作業區域
- 完整覆蓋作業區域
- 即時有效反應速度



# DALIeco

## PIR SENSOR 應用於雙層倉儲的問題

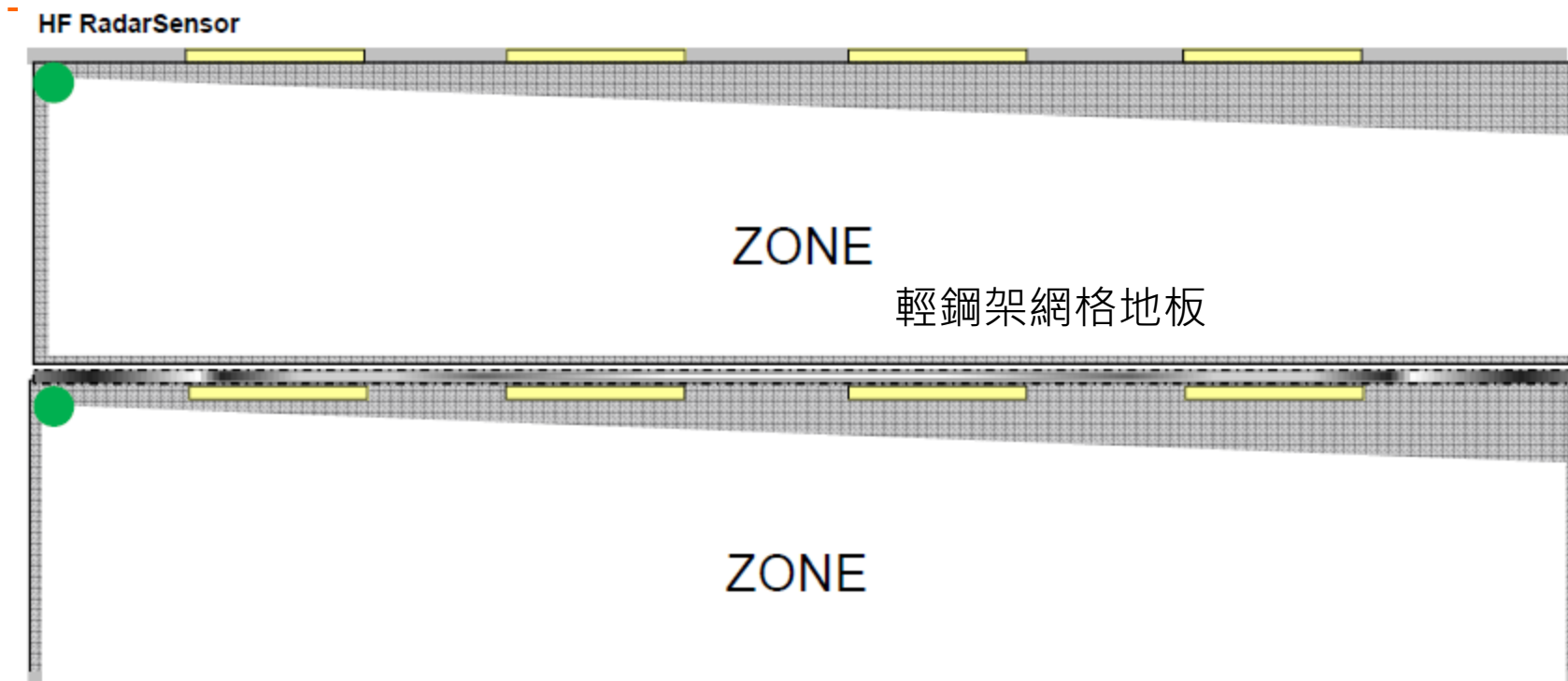


PIR SENSOR不適用此倉儲廠房

- 誤作動率高。PIR會穿透網格地板
- 需要配置大量PIR SENSOR完整覆蓋作業區域

# DALIeco

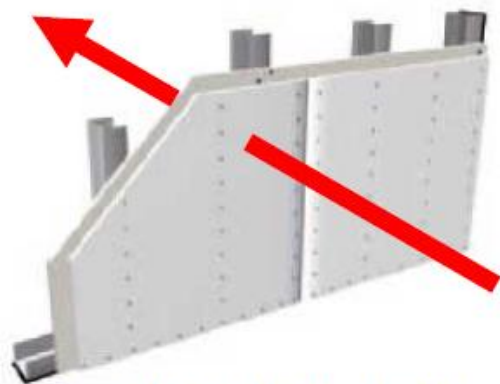
## HF LS LI Radar Sensor 應用於雙層倉儲廠房



- Radar Sensor 正確配置與調整後不會穿透網格地板，誤作動率極低
- 1個Radar Sensor可完整附蓋20~25米走道
- 內建振動感應器消除誤作動率

# DALIeco

## HF LS LI Radar Sensor 限制與不適合地點



Signal penetrates light construction walls



Waterflow in plastic pipes may lead to false detections



Motion of sliding gates will be detected



Movements of machines will be detected



Moving goods on transportation lines will be detected

# DALIeco

## HF LS LI Radar Sensor 參考案例 Zalando



### Pick Tower:

- > 1200 corridors
- ~ 10.000 QT<sub>i</sub> DALI DIM EVG + T5
- ~ 2.500 OSRAM HF LS LI radar sensors + DALIeco control units





# DALIeco

## HF LS LI Radar Sensor 參考案例 Zalando



# MULTIeco

## 系統圖

DALI MULTIeco 控制器支援DALI安定器(1 Ch.)

DIM MULTIeco 控制器支援1-10V安定器

MULTIeco 控制器支援on/off安定器

MULTIeco Sensor系列皆完整支援以上三種  
MULTIeco控制器

支援10個DALI安定器&1-10V安定器

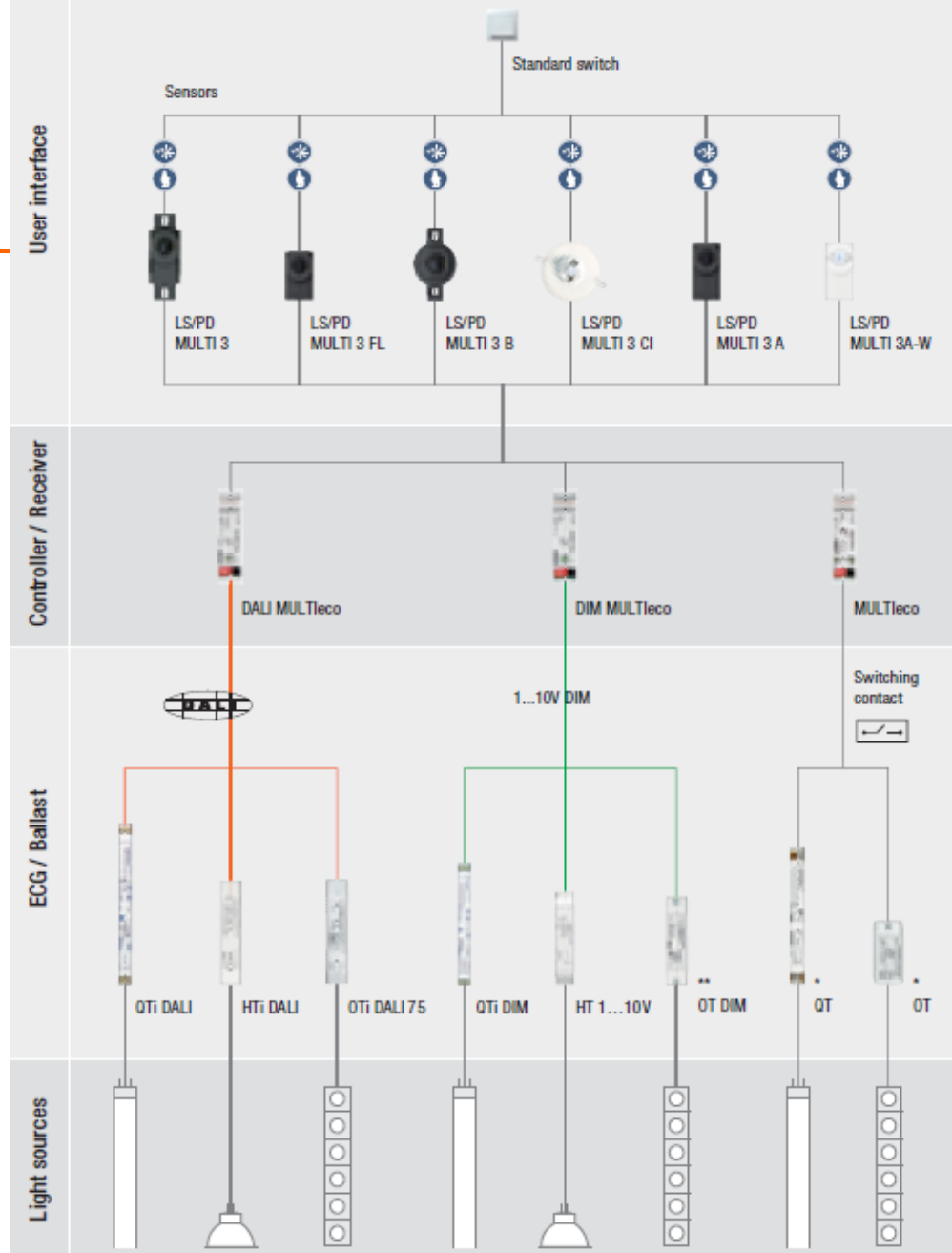
支援20個on/off安定器

控制器透過DIP即可調整設定

適用場合:

10~20個燈具內的會議室及辦公空間

適合DALI/1-10V/Switch 混合種類燈具環境



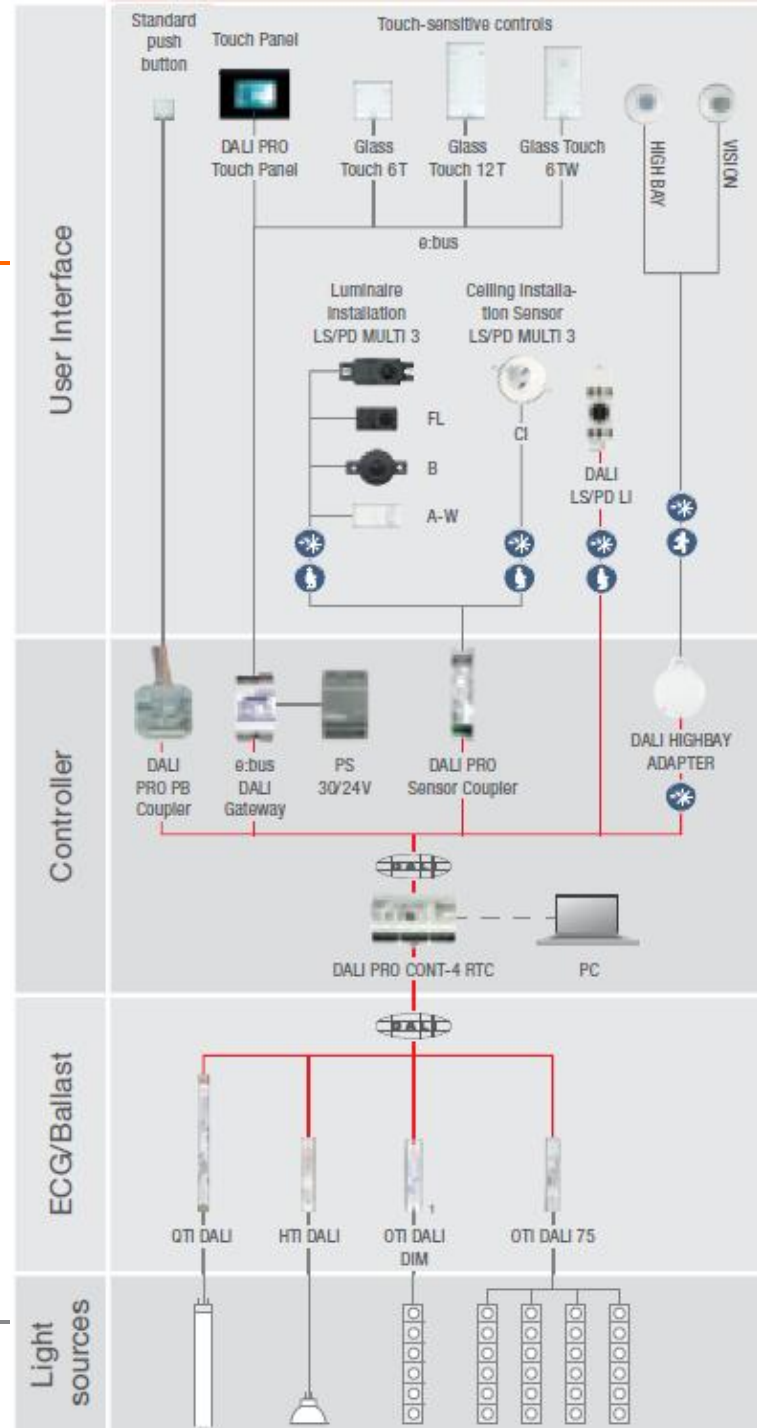
# DALI Professional 系統介紹

DALI Pro CONT4控制器支援4 ch.最高256個DALI  
安定器

透過DALI Pro軟體**完整定址**每一個燈具，搭配日  
光&動態Sensor按照不同工作區域指定完整的照明  
方案; **不需重新配線即可利用PC軟體調整燈具群組與  
變更場景設定**

支援多樣化介面、無線開關、LCD面板適合多種會議  
室情境設定

適用場合:  
辦公樓層、賣場、倉儲廠房、生產線





# DALI Professional

## 軟體概念介紹

The screenshot shows the DALI Professional software interface. The main window displays a configuration for 'Room: Raum 1' with two functional groups: 'Group 1' (Ballasts) and 'Group 2' (Ballasts). 'Function 1' is assigned to Group 1 and includes a 'Push button' and various sensors. 'Function 2' is assigned to Group 2 and includes a 'PIR sensor'. The interface includes a 'Tree' view on the left, a 'Messages' window at the top left, a 'Menu' at the top center, and 'Function properties' and 'Timer properties' windows on the right. A 'Ressource Status' table is located at the bottom.

**Room/Device Tree**

- Rooms (1)
  - Configuration
    - Units
      - Ballasts (10)
        - Ballast 01
        - Ballast 02
        - Ballast 03
        - Ballast 04
        - Ballast 05
        - Ballast 06
        - Ballast 07
        - Ballast 08
        - Ballast 09
        - Ballast 10
      - Couplers (8)
        - PB A 0-0-6-150 A lila
        - PB A 0-0-6-150 B rosa
        - PB A 0-0-6-150 C orange
        - PB A 0-0-6-150 D weiß
      - Timers (2)
        - Timer 01
        - Timer 02
      - Others (0)

**Ressource Status**

Value	Port A	Port B	Port C	Port D
Ballasts	0	0	0	0
Couplers	4			0
Groups	0			0
Scenes	0			0
Current (mA)	6			0

# Easy Color Control

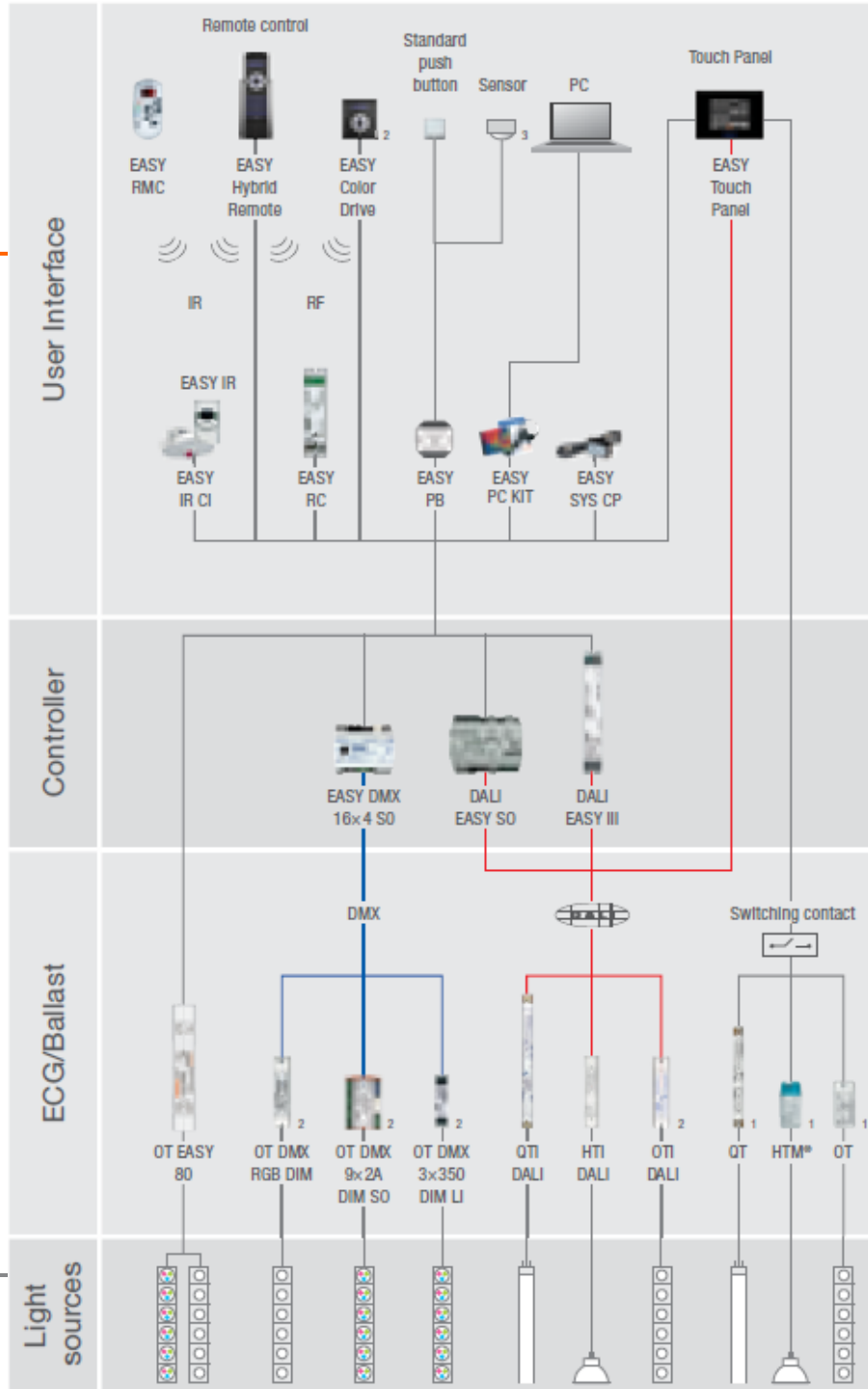
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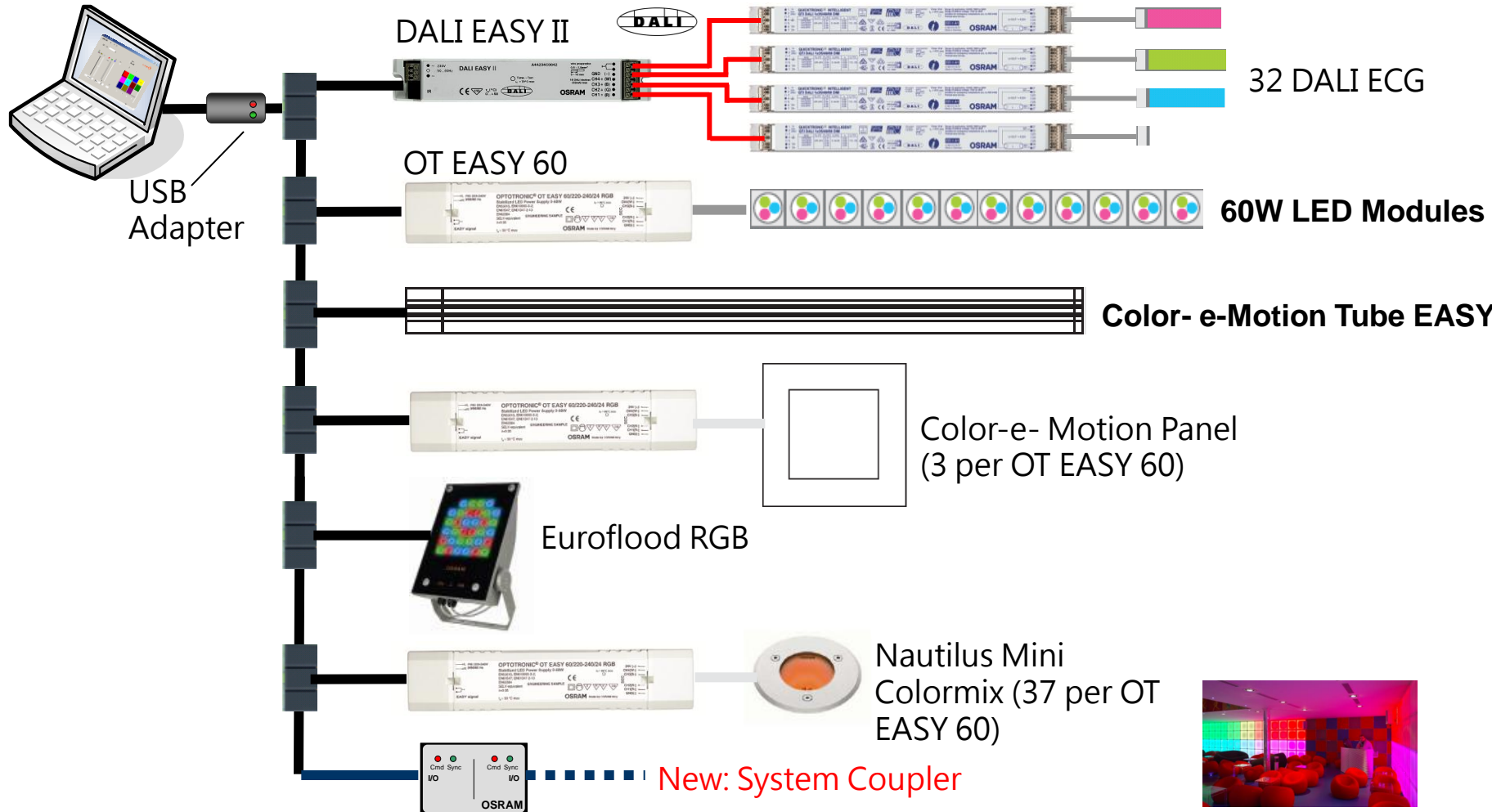
# Easy Color Control 系統圖

支援DALI/DMX/Switch  
適用情境氣氛調光的地點  
可模擬日光氣氛照明色溫  
可記憶4~16種燈光變化順序

適用場合：  
商場、餐廳、酒吧、醫院、旅館、會議  
中心、健身房



# EASY Color Control – luminaire interfaces



# EASY Color Control – operation interfaces

