

inventronics

&


DRK
LIGHTING
LIGHT THE FUTURE

Wireless Connectivity

HubSense[®] - Qualified Bluetooth[®] Mesh

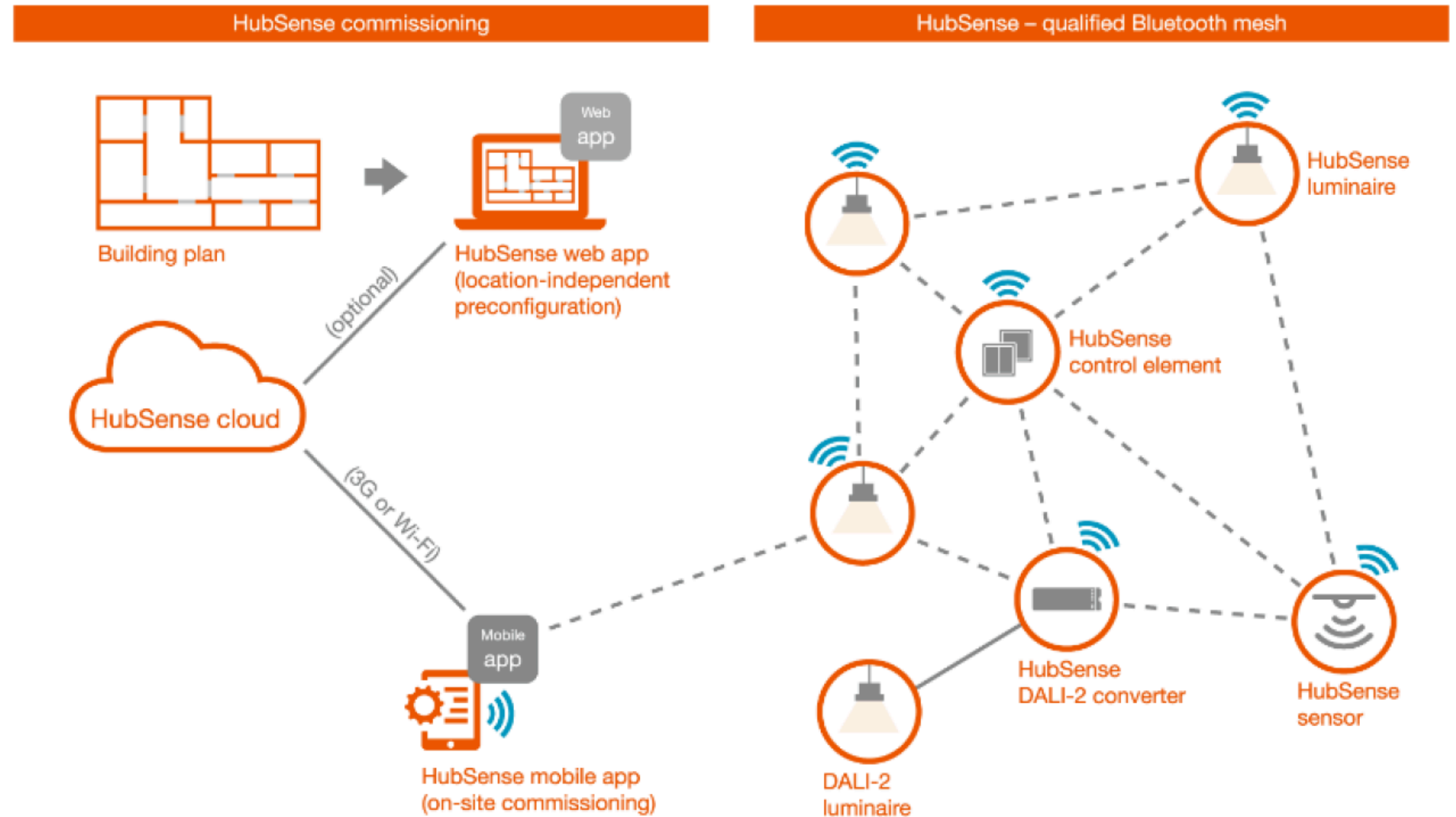
Simplifying lighting projects



Inventronics HubSense®

Your Host

‘HubSense®
by Inventronics
is a wireless ecosystem
based on Bluetooth® Mesh
to simplify the installation
and minimise the retrofit
effort’



Inventronics HubSense[®]

Qualified Bluetooth[®] Mesh: The Rational Choice



Why standardisation?

INTERCHANGEABILITY

Higher productivity and lower manufacturing costs

EFFICIENCY

Standardisation often includes quality assurance measures and committee offer new features constantly

AVAILABILITY

Minor capital on stock, shorter lead time for luminaire manufacturer

Why Qualified Bluetooth[®] Mesh?

BLUETOOTH MESH integrates the BLE smart devices used for commissioning

ENERGY SAVING

Easy installation of lighting and presence sensors

SECURE

Robust by definition and certified

Inventronics HubSense®

European Market for Wireless Retrofit

Unlock the potential of additional energy savings and well being for existing buildings:



Commercial building area
Europe > 6.2 billion m²



- New buildings - 1%
- About 80% are light-dimmable installation *



- Renovated buildings - 4%
- Only 20% are light-dimmable installation*



*Source BPIE Survey

Benefits for all the players in the value chain

FACILITY MANAGER	LUMINAIRES MANUFACTURER	INSTALLER
<ul style="list-style-type: none">• Savings by light / vacancy sensing• Robust and secure communication• Short downtime during refurbishment• Gradual updates / refurbishment possible• Easy to re-adapt to new layouts	<ul style="list-style-type: none">• New high-value luminaire to sell• New opportunities as wireless• Sustainable thanks to open standard• Pre-setting in factory is possible• One stop shop from Inventronics	<ul style="list-style-type: none">• Fast installation and no masonry works• No gateway needed• Multi-commissioning possible (short time)• Pre-configuration service possible• Real scalable solutions

Inventronics HubSense[®]

OBM Product Overview - base portfolio



COMMISSIONING



HubSense Web App
(planning)



HubSense Mobile App
(planning on site
commissioning)

INPUT DEVICE / SENSOR



EASYFIT EWSSB



EASYFIT EWSDB



HUB PB COUPLER
1-4 Buttons

CONTROL DEVICE / SENSOR



QBM DALI CONV LI



QBM D4i LS/PD HB



QBM D4i LS/PD MB

QBM D4i LS/PD LBI



QBM D4i LS/PD R



QBM D4i R



QBM 220 LS/PD HB



NEW WIRELESS
EL-T CONTROLLER



QBM DALI EL-T CONVI

LED CONTROL GEAR



OTi DALI



OTi DEXALI



OTi DEXALI



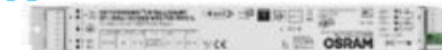
OTi DEXALI



OTi DALI



OTi DALI



OTi Wi D NFC L



OTi Wi LP



OTi Wi LP I

LED LOAD

HubSense - One Ecosystem

Qualified Bluetooth Mesh components

NO MASONRY WORKS

OFFICES

NO CONTROL CABLES

SCHOOLS

NO GATEWAY

SPORTS HALLS

SHORTER TIME ON SITE

SECURITY CERTIFIED

RETAIL

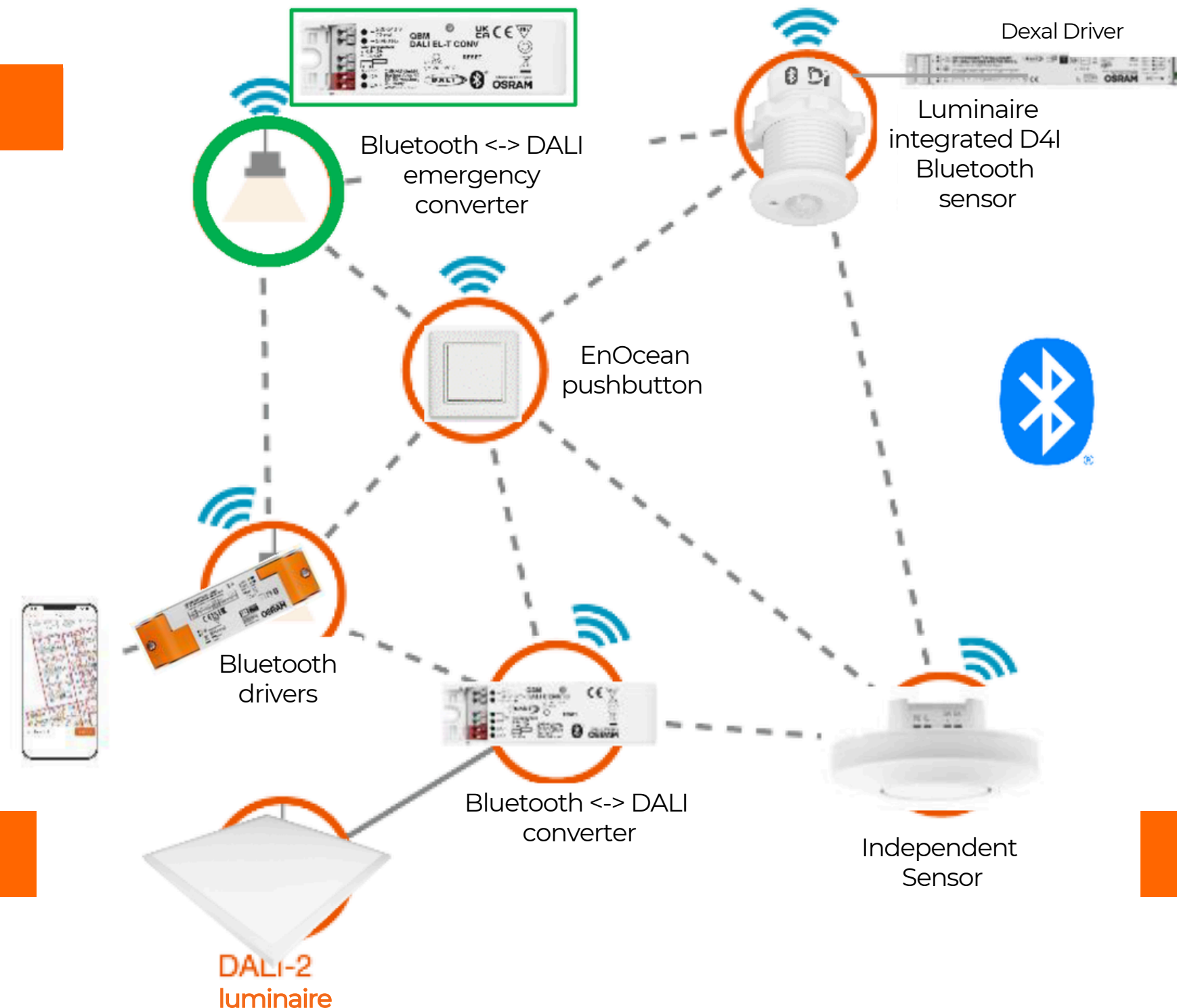
STANDARD PROTOCOL

WAREHOUSES

EASY RETROFIT

FACTORIES

ONE SHOP STOP SUPPLIER



Inventronics HubSense®

A wide basket of components - A Summary

HubSense: USP

HubSense HAS A LARGE PORTFOLIO

- Sensors for luminaire integration and independent
- Converter for DALI-2 integration
- LED drivers SELV (compact) and non-isolated (linear)
- Converter for Emergency Luminaires
- Push buttons and EnOcean

CAN ALREADY COVER

- Offices
- Schools
- Warehouses
- Sports halls
- Indoor parking
- Retails
- Factories

BENEFIT OF A WIRELESS INSTALLATION

- No masonry works
- No control cable and its cost
- Easy retrofit (1-2-1) and working at stages
- Shorter time on site -> faster re-start of activity

BENEFIT OF INVENTRONICS QUALIFIED BLUETOOTH MESH

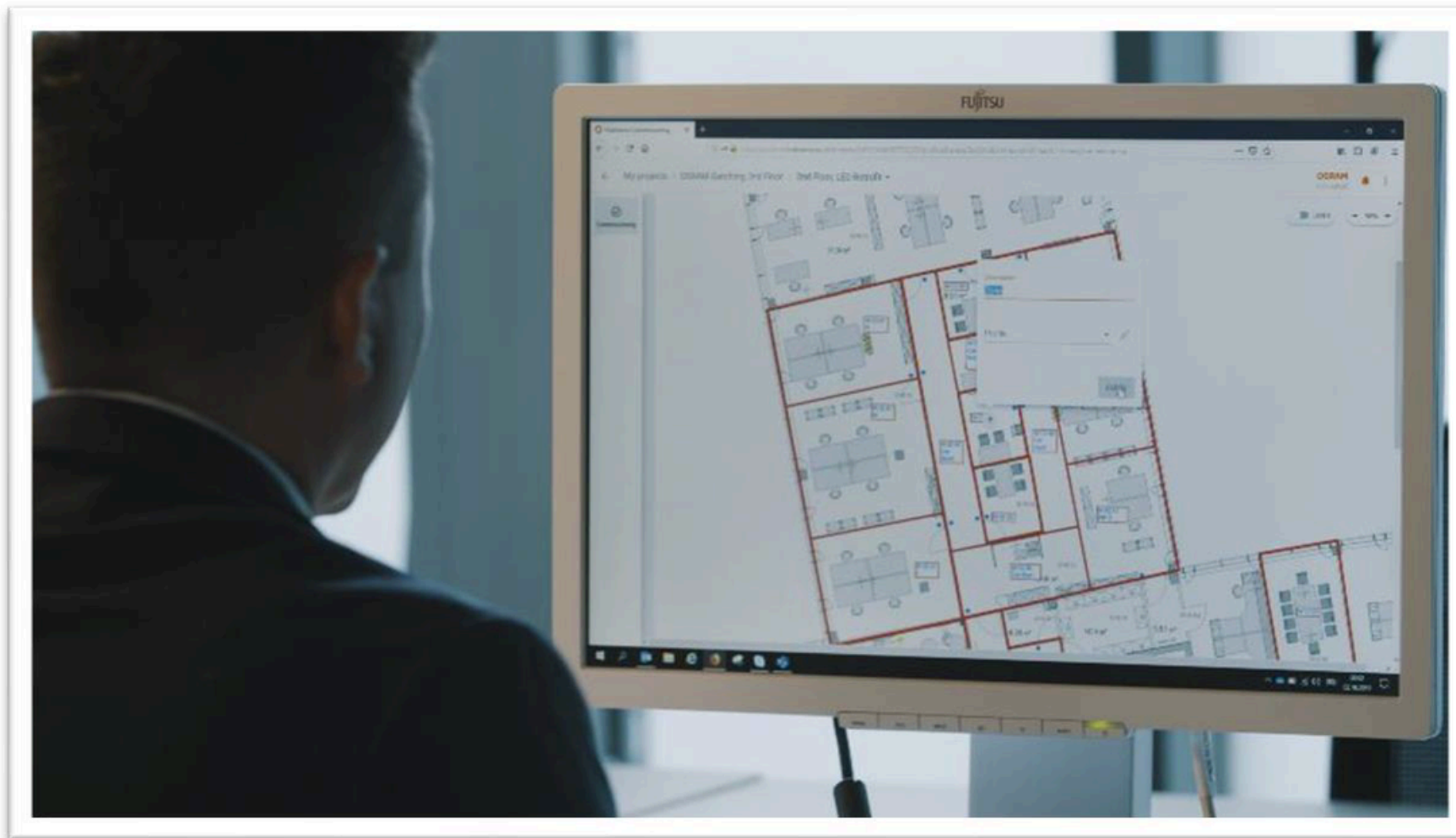
- No gateway
- Standard protocol (mandatory on public spaces)
- Security certified 3rd party: ioXT and psa
- One shop stop supplier

Inventronics HubSense[®]

Reason to believe → installation in Inventronics' offices

Upgrading the lighting in the office building in OSRAM Munich, Garching in terms of:

- Energy efficiency
- Lighting comfort
- Flexibility



1. PLANNING

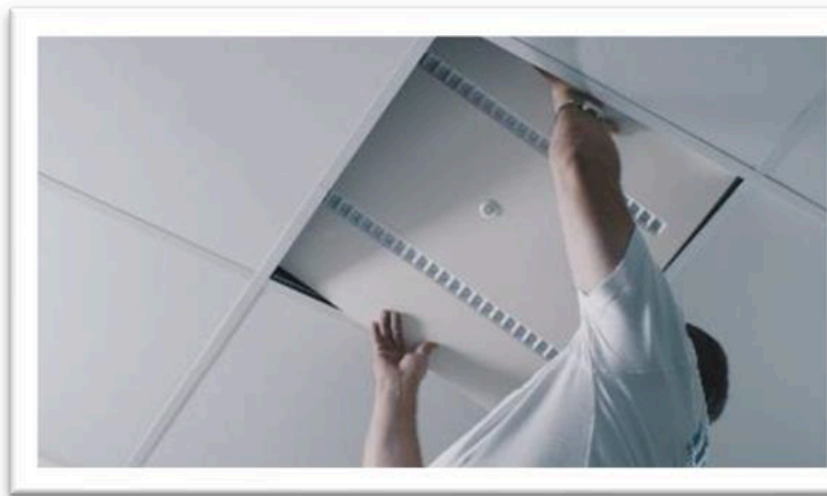
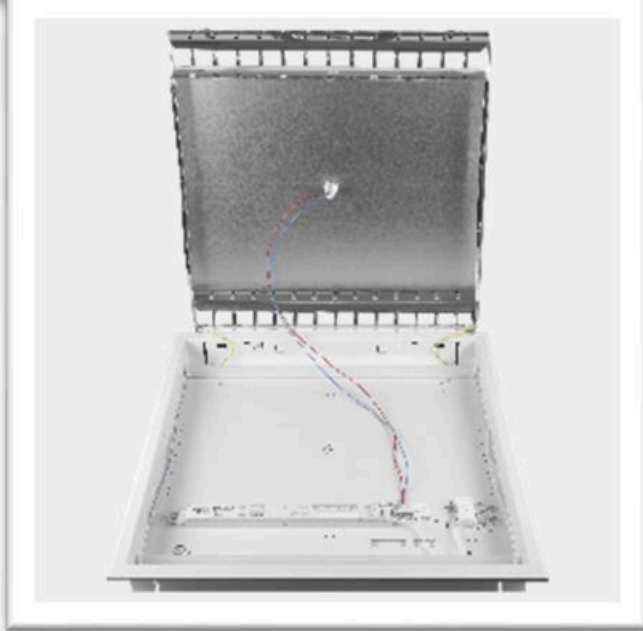
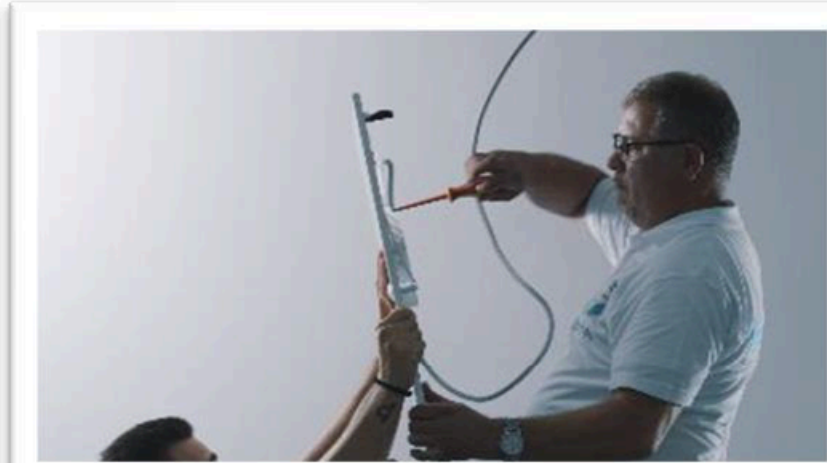
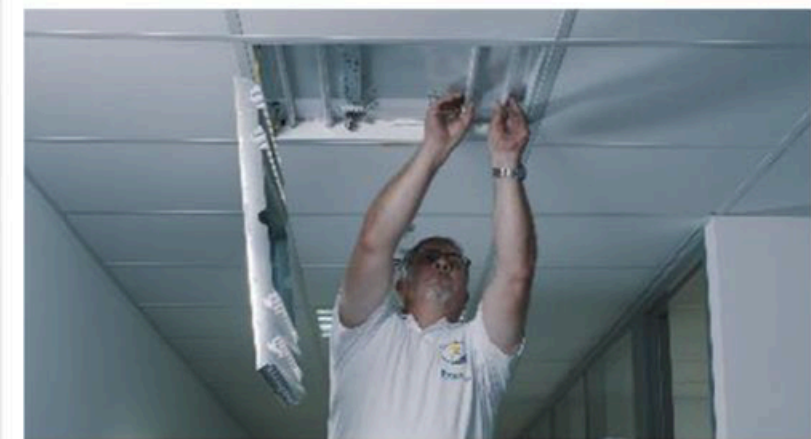
Thanks to reliable Bluetooth[®] Mesh wireless technology, the scalable retrofit solution can do without control lines and gateways, and can also be planned and pre-commissioned from anywhere using the web app. Information is pre-stored in the cloud.

Inventronics HubSense®

Reason to believe → installation in Inventronics' offices

Upgrading the lighting in the office building in OSRAM Munich, Garching in terms of:

- Energy efficiency
- Lighting comfort
- Flexibility



2. INSTALLATION

The existing infrastructure could not only be used without costly and time-consuming rewiring, but gateways or other complex IT elements were also unnecessary.

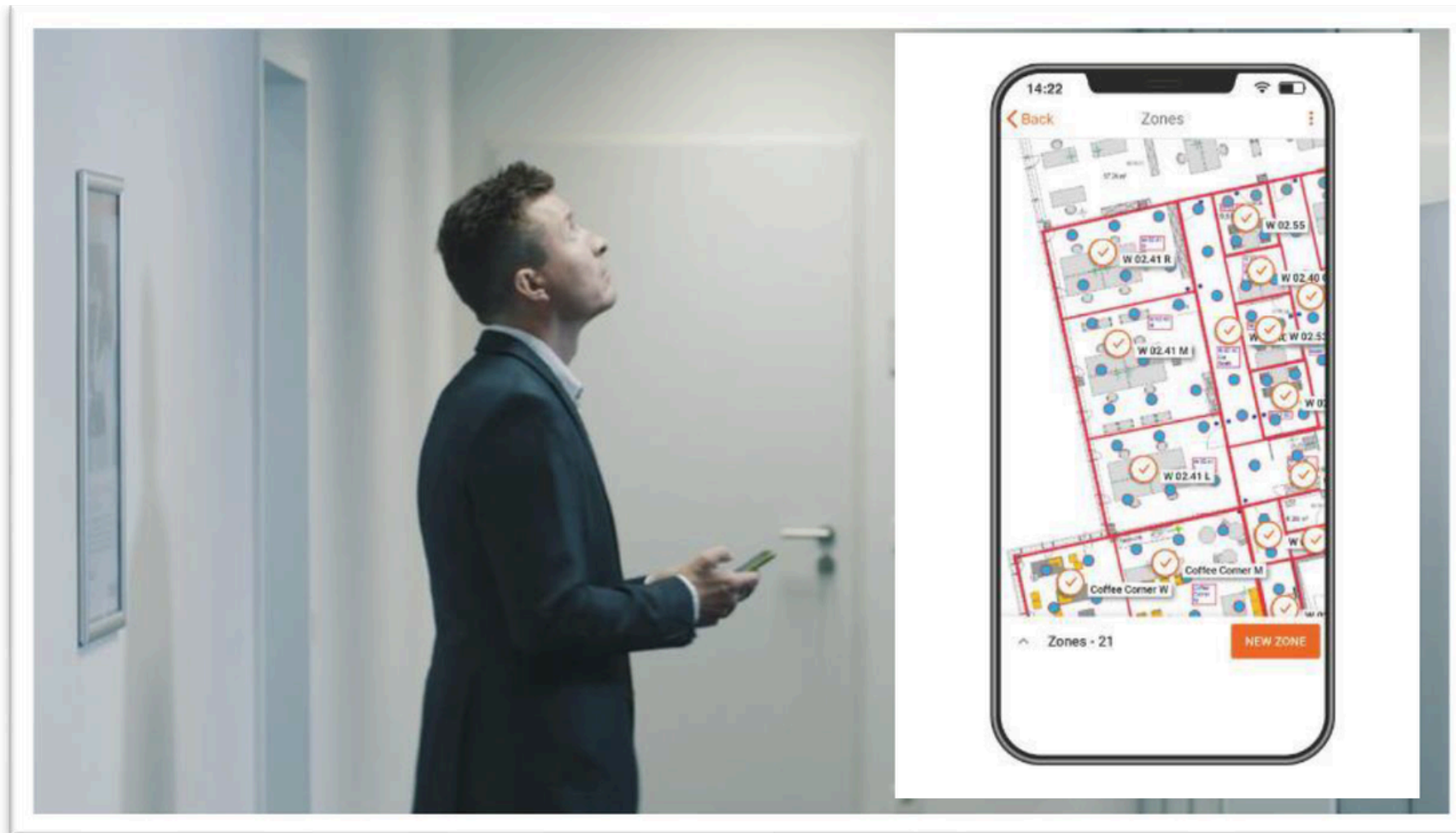
The system is particularly attractive for installers because it can easily retrofit existing office luminaires.

Inventronics HubSense®

Reason to believe → installation in Inventronics' offices

Upgrading the lighting in the office building in OSRAM Munich, Garching in terms of:

- Energy efficiency
- Lighting comfort
- Flexibility



3. COMMISSIONING

Commissioning on-site can be carried out by several installers at the same time.

Simple luminaire localisation and zone assignment via the mobile app. Information dropped by the cloud.

Reduced time spend compared to wired systems

No structural work thanks to standardised Qualified Bluetooth® Mesh wireless technology.

OSRAM HubSense®

New QBM D4I Dongle with Daylight / Presence Sensor



QBM D4I LS/PD R



+

IP 65

+

Light Shield

PRODUCT FEATURES

- Works with OSRAM HubSense®
- Qualified Bluetooth® Mesh Wireless Sensor Module
- Works with OSRAM DEXAL Driver
- Wireless Sensor Module for office luminaire
- Including Daylight and Presence/Motion Detection

MAIN FEATURES	
Input Voltage	Powered by DEXAL Bus Power Supply
Input Current	10 mA <150 mW
Maximum of drivers	4 DEXAL or 4 DALI driver plus DALI Bus power supply
Wireless Range (typ)	10 m
Wireless Protocol	Qualified Bluetooth® Mesh by SILVAIR*
EnOcean Switch Support	Yes (EWSSB and EWSDB)
Dimension	1/2" knockout, h = 36 mm (43 mm)
Detection Range	Ø 8 m (major) Ø 3 m (minor)
Detection Height	< 5 m
Ambient Light Sensor	Yes

*Technology Partner: SILVAIR

Inventronics HubSense®

Devices in the linear system



DEXAL LED Driver



1 x QBM D4i LS/PD LI R
Every **4 x OTI DX IND**

Or

1 x DEXAL driver + 3 x DALI drivers

Inventronics HubSense®

New QBM D4I Dongle



QBM D4I R



PRODUCT FEATURES

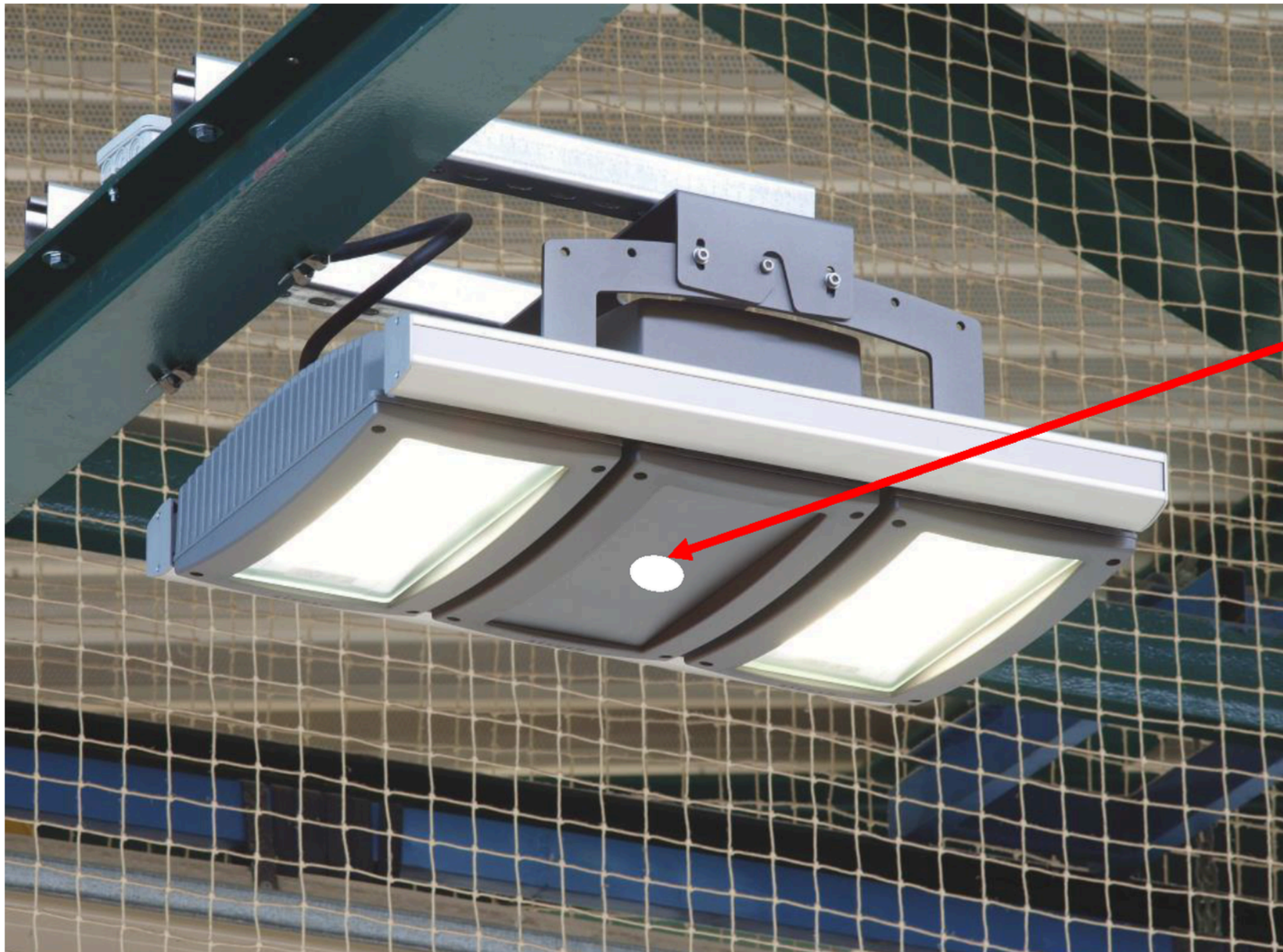
- Works with OSRAM HubSense®
- Qualified Bluetooth® Mesh Wireless Sensor Module
- Works with OSRAM DEXAL Driver
- Wireless Sensor Module for office luminaire

MAIN FEATURES	
Input Voltage	Powered by DEXAL Bus Power Supply
Input Current	10 mA <150 mW
Maximum of drivers	4 DEXAL or 4 DALI driver plus DALI Bus power supply
Wireless Range (typ)	10 m
Wireless Protocol	Qualified Bluetooth® Mesh by SILVAIR*
EnOcean Switch Support	Yes (EWSSB and EWSDB)
Dimension	1/2" knockout, h = 36 mm (43 mm)

*Technology Partner: SILVAIR

Inventronics HubSense®

Devices to create smart luminaire



1 x QBM D4i LI R
To create smart luminaire

Controlled Remotely

OSRAM HubSense®

New QBM D4I Dongle for High Bay with Daylight/Presence Sensor



QBM D4I LS/PD HB



PRODUCT FEATURES

- Works with OSRAM HubSense®
- Qualified Bluetooth® Mesh Wireless Sensor Module
- Works with OSRAM DEXAL Driver
- Wireless Sensor Module for office luminaire
- Including Daylight and Presence/Motion Detection

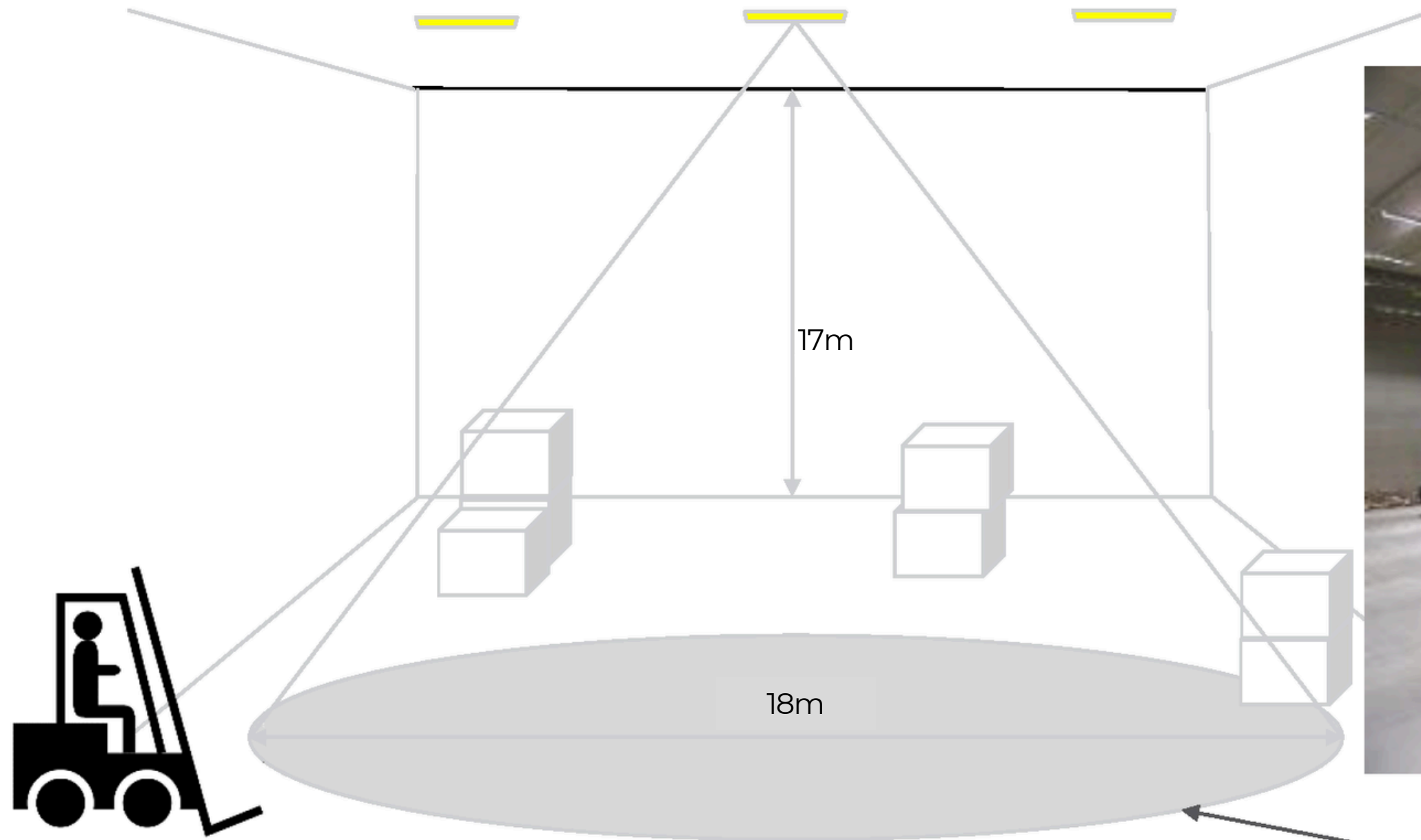
MAIN FEATURES	
Input Voltage	Powered by DEXAL Bus Power Supply
Input Current	10 mA <150 mW
Maximum of drivers	4 DEXAL or 4 DALI driver plus DALI Bus power supply
Wireless Range (typ)	18 m
Wireless Protocol	Qualified Bluetooth® Mesh by SILVAIR*
EnOcean Switch Support	Yes (EWSSB and EWSDB)
Dimension	1/2" knockout, h = 36 mm (55 mm)
Detection Range	Ø 18 m (major)
Detection Height	< 17 m
Ambient Light Sensor	Yes

*Technology Partner: SILVAIR

OSRAM HubSense

New QBM D4I Dongle for High Bay with Daylight/Presence Sensor

QBM D4I LS/PD HB



Large detection area 18 meters

Inventronics HubSense®

Devices in the linear system



1 x QBM D4i LS/PD LI R
Every **4 x OTI IND**

Or

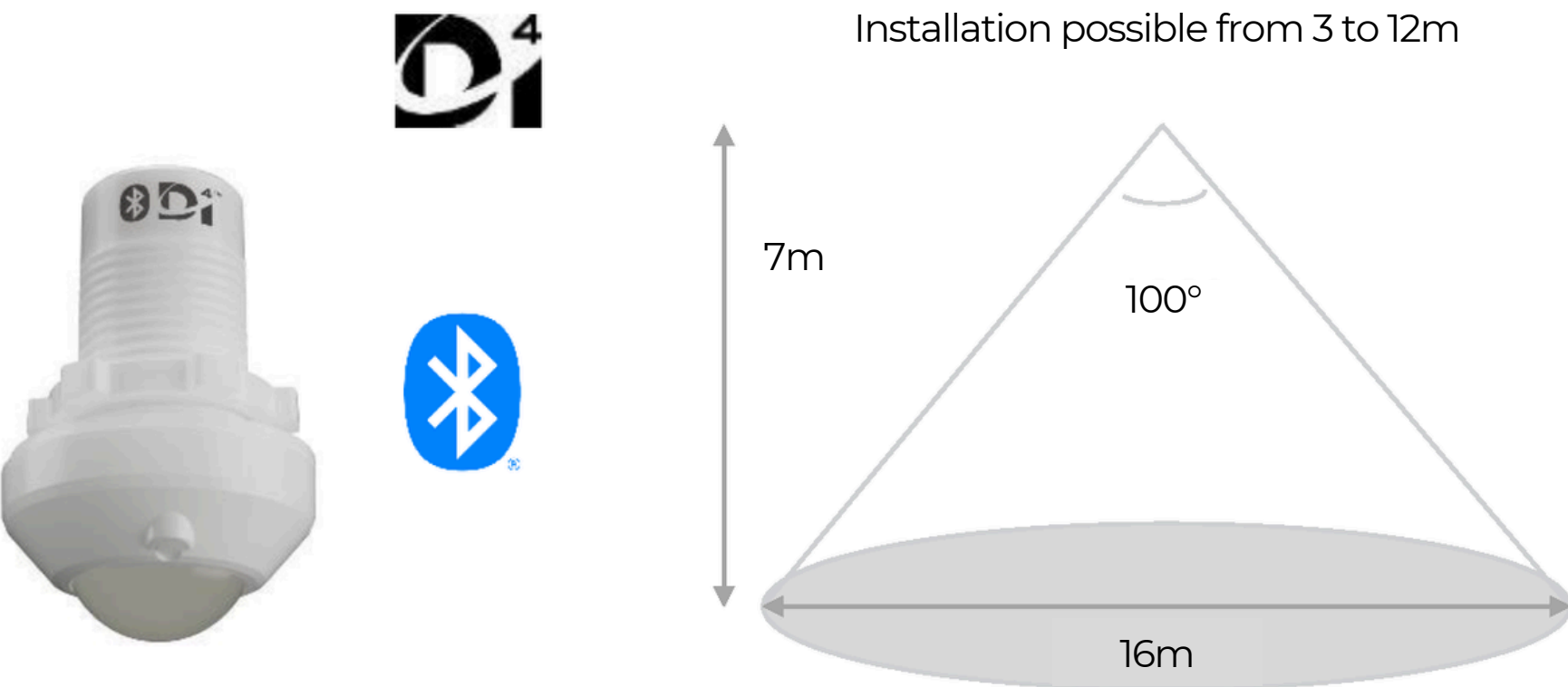
1 x DEXAL driver + 3 x DALI drivers

OSRAM HubSense®

New QBM D4I Dongle with Daylight / Presence Sensor



QBM D4I LS/PD MB R

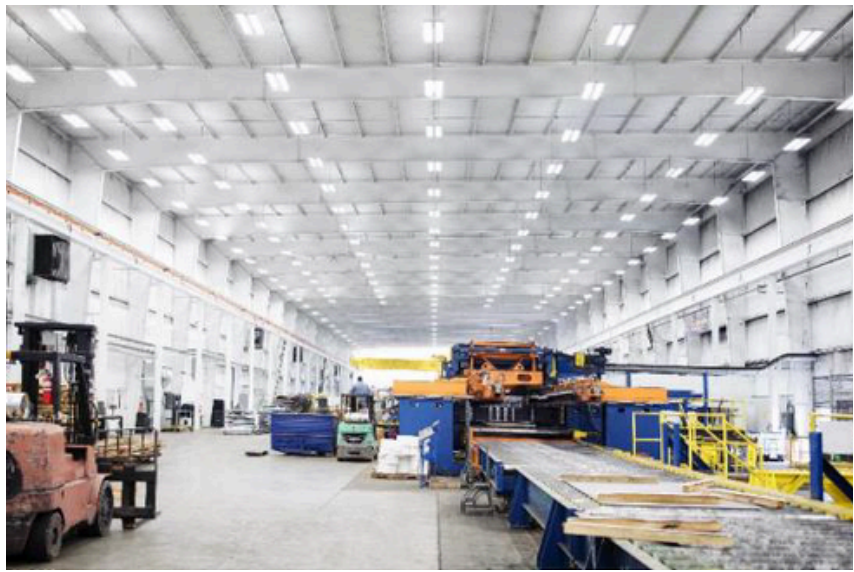


PRODUCT FEATURES

- Works with OSRAM HubSense®
- Qualified Bluetooth® Mesh Wireless Sensor Module
- Works with OSRAM DEXAL Driver
- Wireless Sensor Module for office luminaire
- Including Daylight and Presence/Motion Detection

MAIN FEATURES	
Input Voltage	Powered by DEXAL Bus Power Supply
Input Current	10 mA <150 mW
Maximum of drivers	4 DEXAL or 4 DALI driver plus DALI Bus power supply
Wireless Range (typ)	20 m
Wireless Protocol	Qualified Bluetooth® Mesh by SILVAIR*
EnOcean Switch Support	Yes (EWSSB and EWSDB)
Dimension	1/2" knockout, h = 36 mm (43 mm)
Detection Range	1610-12
Detection Height	< 7 m< 12 m
Ambient Light Sensor	Yes

IP 65



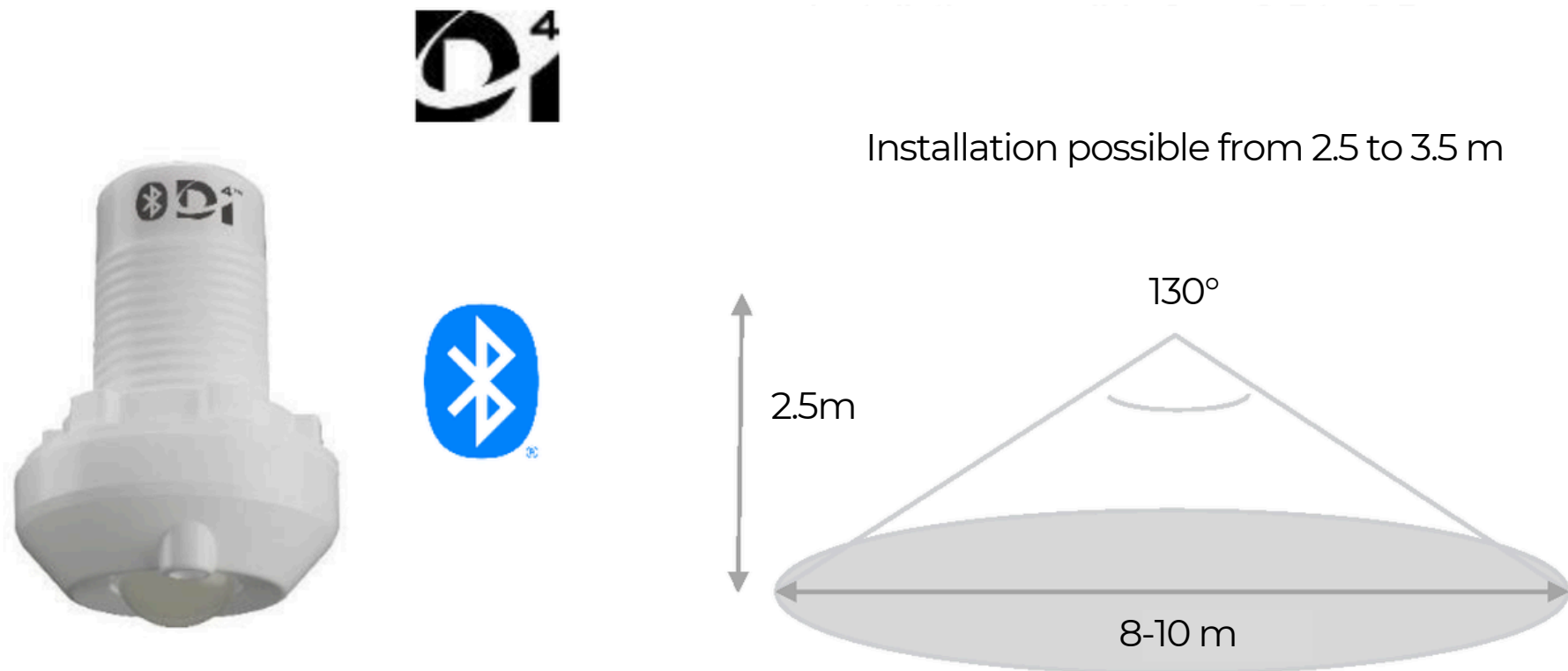
*Technology Partner: SILVAIR

OSRAM HubSense[®]

QBM D4I LS/PD for Low Bay application



QBM D4I LS/PD MB R

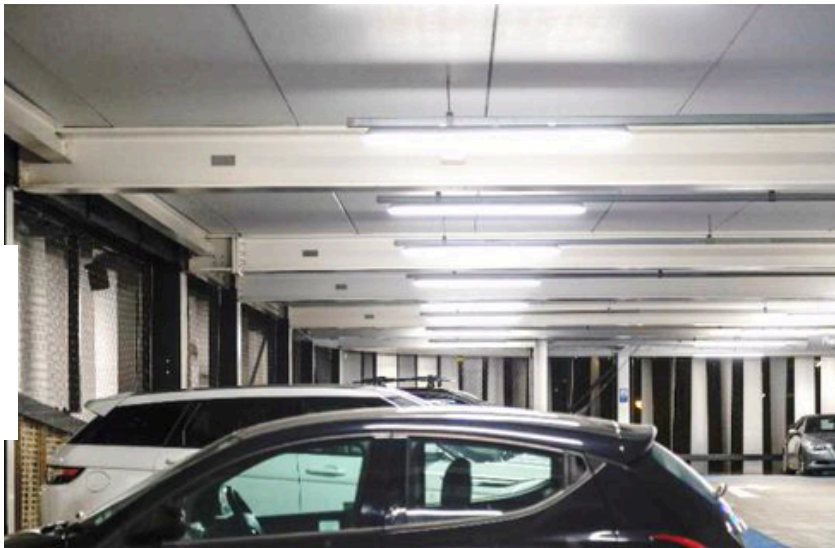


PRODUCT FEATURES

- Works with OSRAM HubSense[®]
- Qualified Bluetooth[®] Mesh Wireless Sensor Module
- Works with OSRAM DEXAL Driver
- Wireless Sensor Module for office luminaire
- Including Daylight and Presence/Motion Detection

MAIN FEATURES	
Input Voltage	Powered by DEXAL Bus Power Supply
Input Current	10 mA <150 mW
Maximum of drivers	4 DEXAL or 4 DALI driver plus DALI Bus power supply
Wireless Range (typ)	10 m
Wireless Protocol	Qualified Bluetooth [®] Mesh by SILVAIR [*]
EnOcean Switch Support	Yes (EWSSB and EWSDB)
Dimension	1/2" knockout, h = 36 mm (43 mm)
Detection Range	ø 8-10 m
Detection Height	< 2.5 - 3.5 m
Ambient Light Sensor	Yes

IP 65



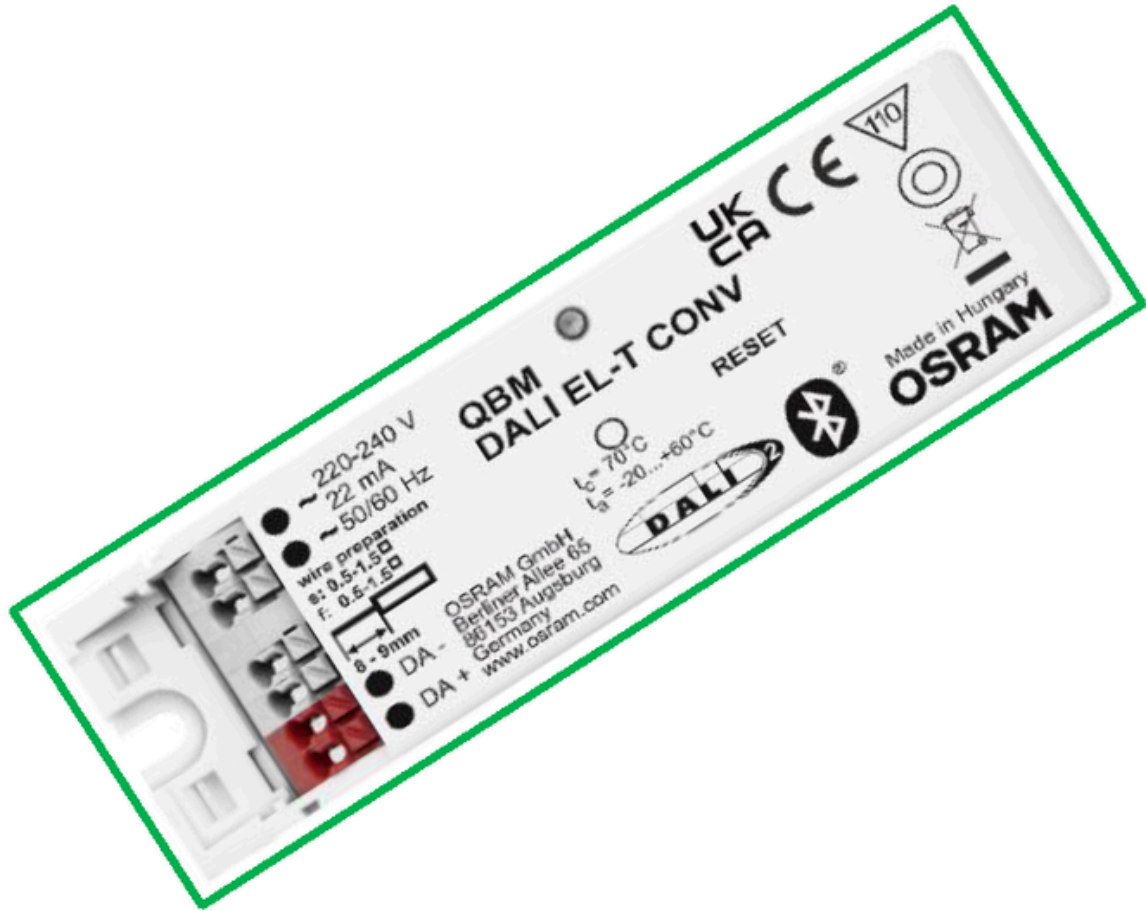
^{*}Technology Partner: SILVAIR

OSRAM HubSense®

New QBM D4I Dongle with Daylight / Presence Sensor



Standalone solution for emergency lighting testing, reporting and maintenance



PRODUCT FEATURES

- Fits to DALI-2 Emergency Luminaires
- One ecosystem for all the luminaires
- Schedule of **Functional & Duration** test
- Report of battery status and maintenance need

MAIN FEATURES	
Input Voltage	220 - 240V
DALI Bus Current	82 mA (32 drivers plus 1 sensor)
Wireless Range (typ)	10 m
Wireless Protocol	Qualified Bluetooth® Mesh by SILVAIR*
EnOcean switch support	Yes (EWSSB and EWSDB)
Dimming Interface	DALI, Basic isolated
Dimension	108 x 30 x 21 mm ²
Accessory	Cable clamps
Approbation	CE

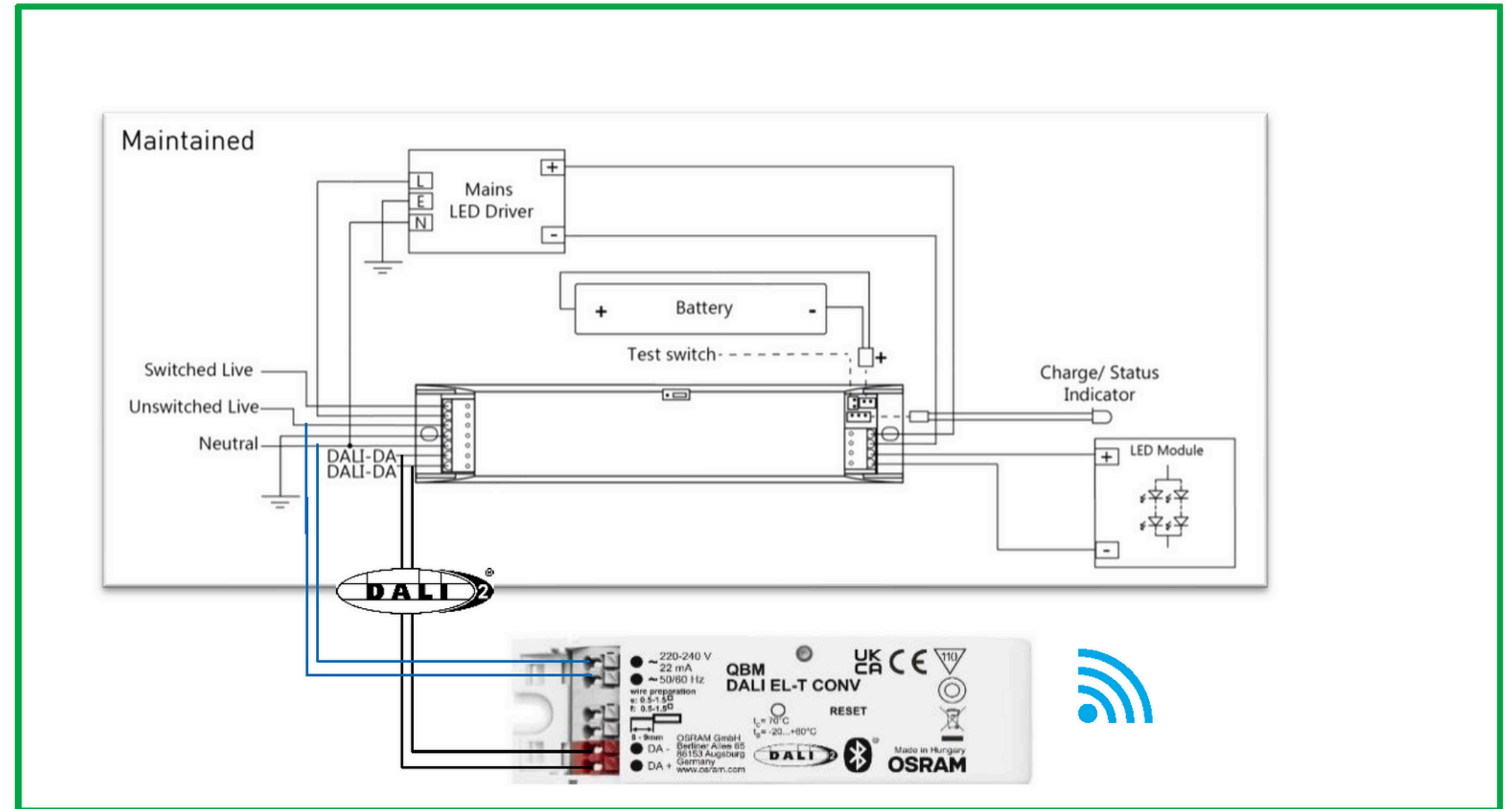


*Technology Partner: SILVAIR

Product installation

QBM DALI Emergency Test Converter

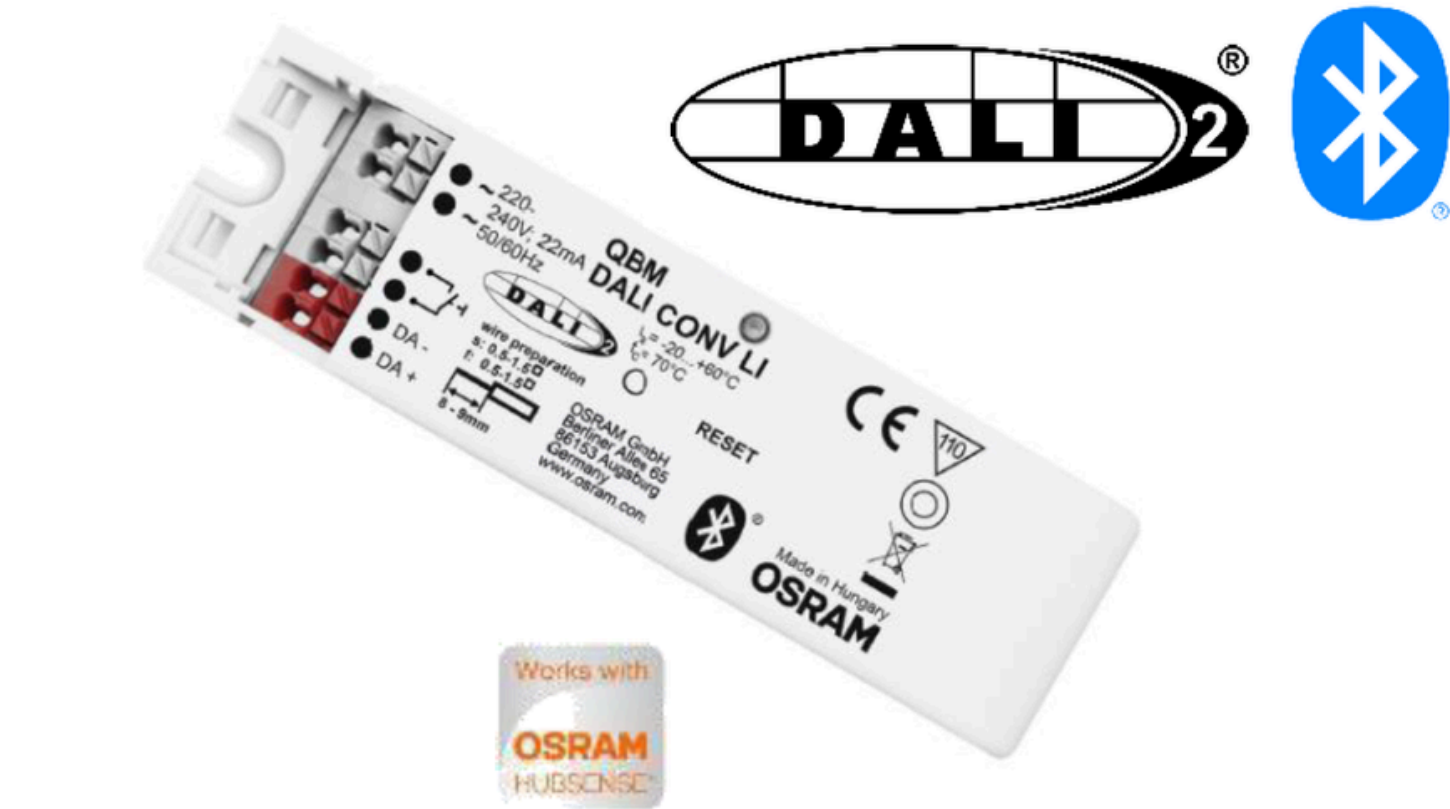
The DALI Emergency luminaire is configured by the HubSense ecosystem only



OSRAM HubSense®

QBM DALI-2 Converter with DALI Sensor support

QBM DALI CONV LI



PRODUCT FEATURES

- Works with OSRAM HubSense®
- Qualified Bluetooth® Mesh Wireless DALI Converter
- Control of up to 32 DALI-2 drivers in broadcast mode (Part - 207)
- 1 DALI-2 Sensor support (Part - 303, Part - 304)
- 1 push button support

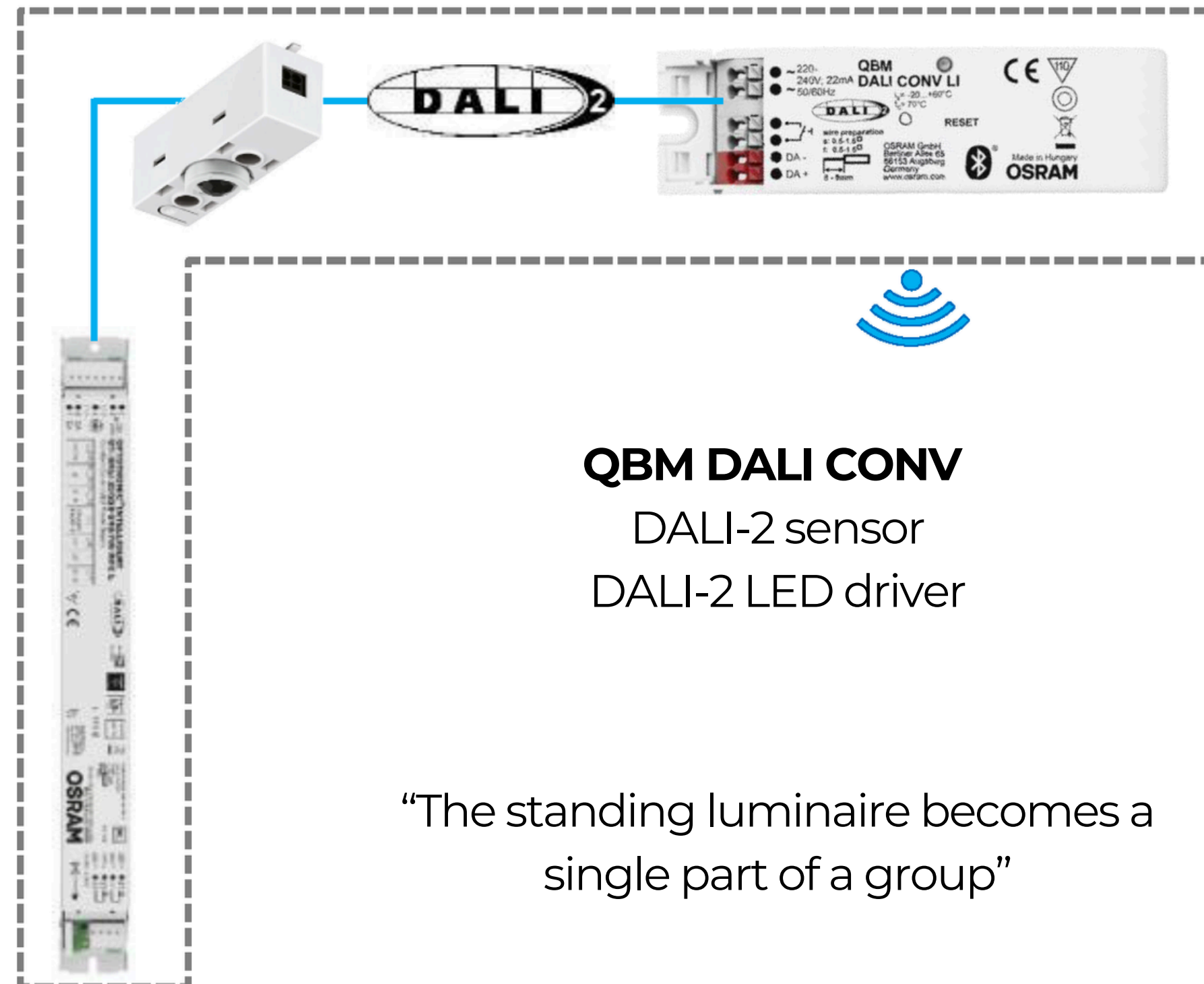
MAIN FEATURES	
Input Voltage	220 - 240V
DALI Bus Current	82 mA (32 drivers plus 1 sensor)
Wireless Range (typ)	10 m
Wireless Protocol	Qualified Bluetooth® Mesh by SILVAIR*
EnOcean switch support	Yes (EWSSB and EWSDB)
Dimming Interface	DALI, Basic isolated
Dimension	108 x 30 x 21 mm ²
Accessory	Cable clamps
Approbation	CE



*Technology Partner: SILVAIR

OSRAM HubSense®

SMART standing luminaires with QBM DALI CONV



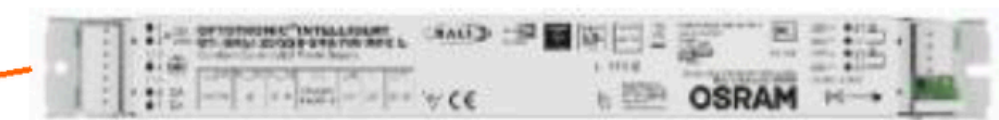
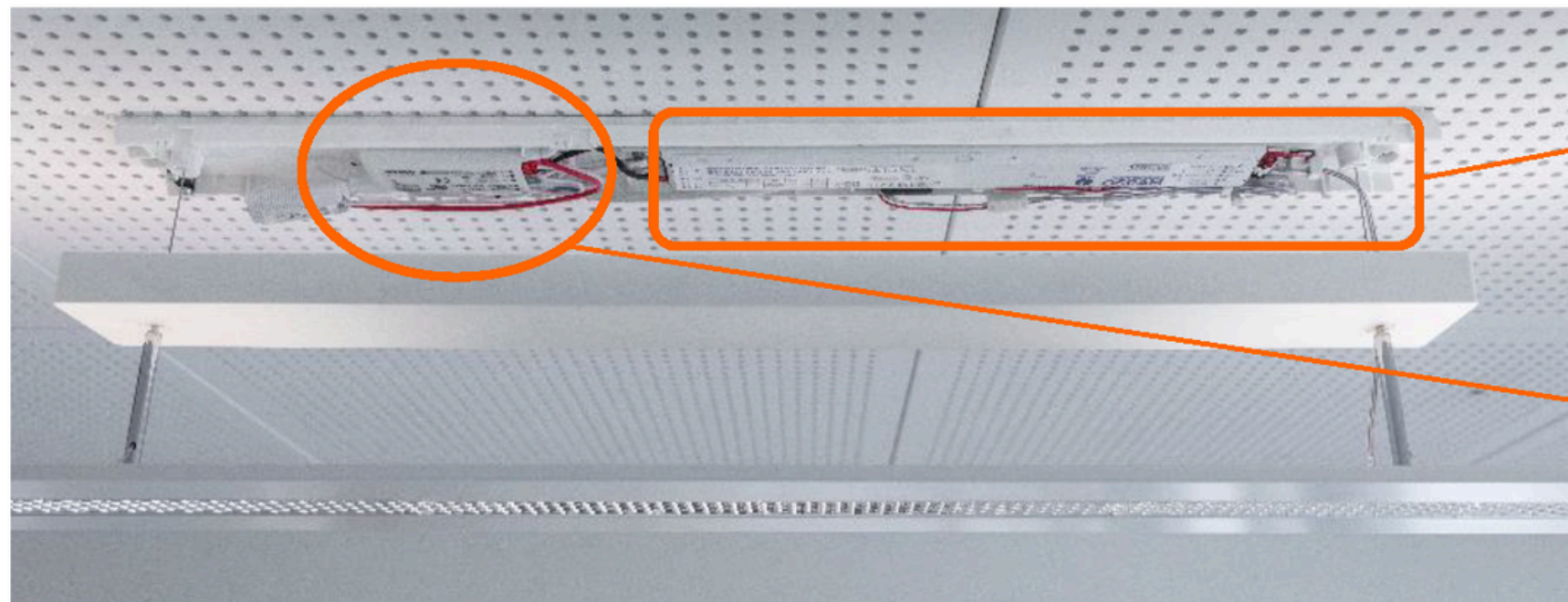
“The standing luminaire becomes a single part of a group”

OSRAM HubSense®

SMART pendant luminaires with QBM DALI CONV

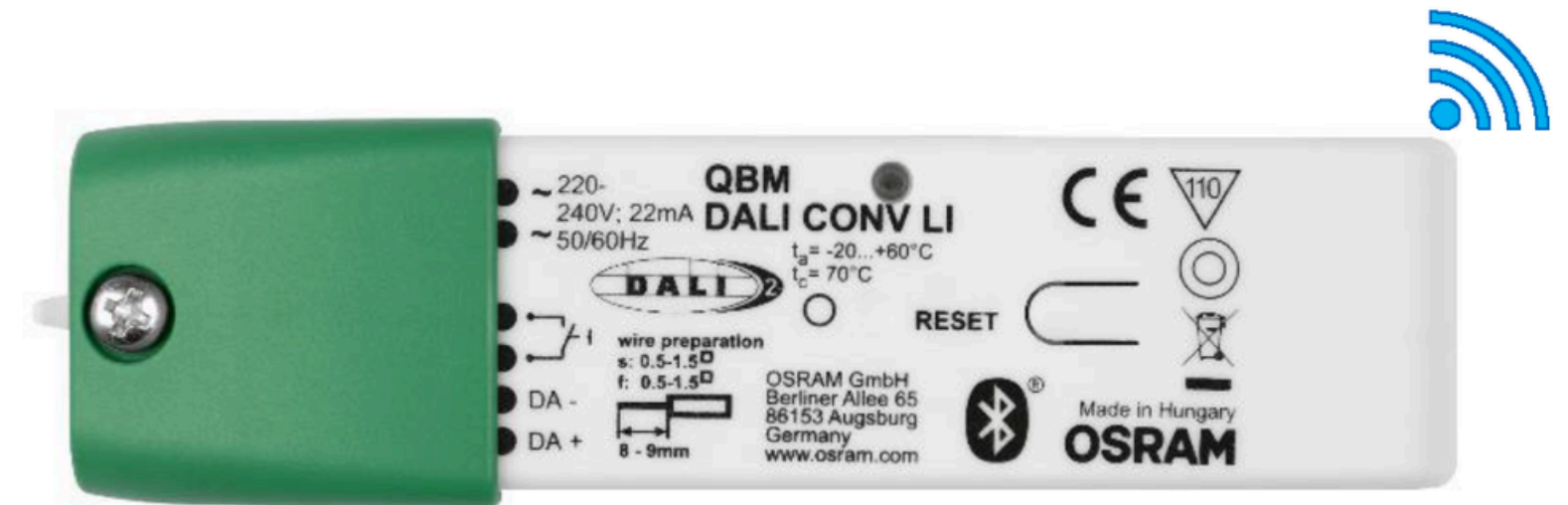
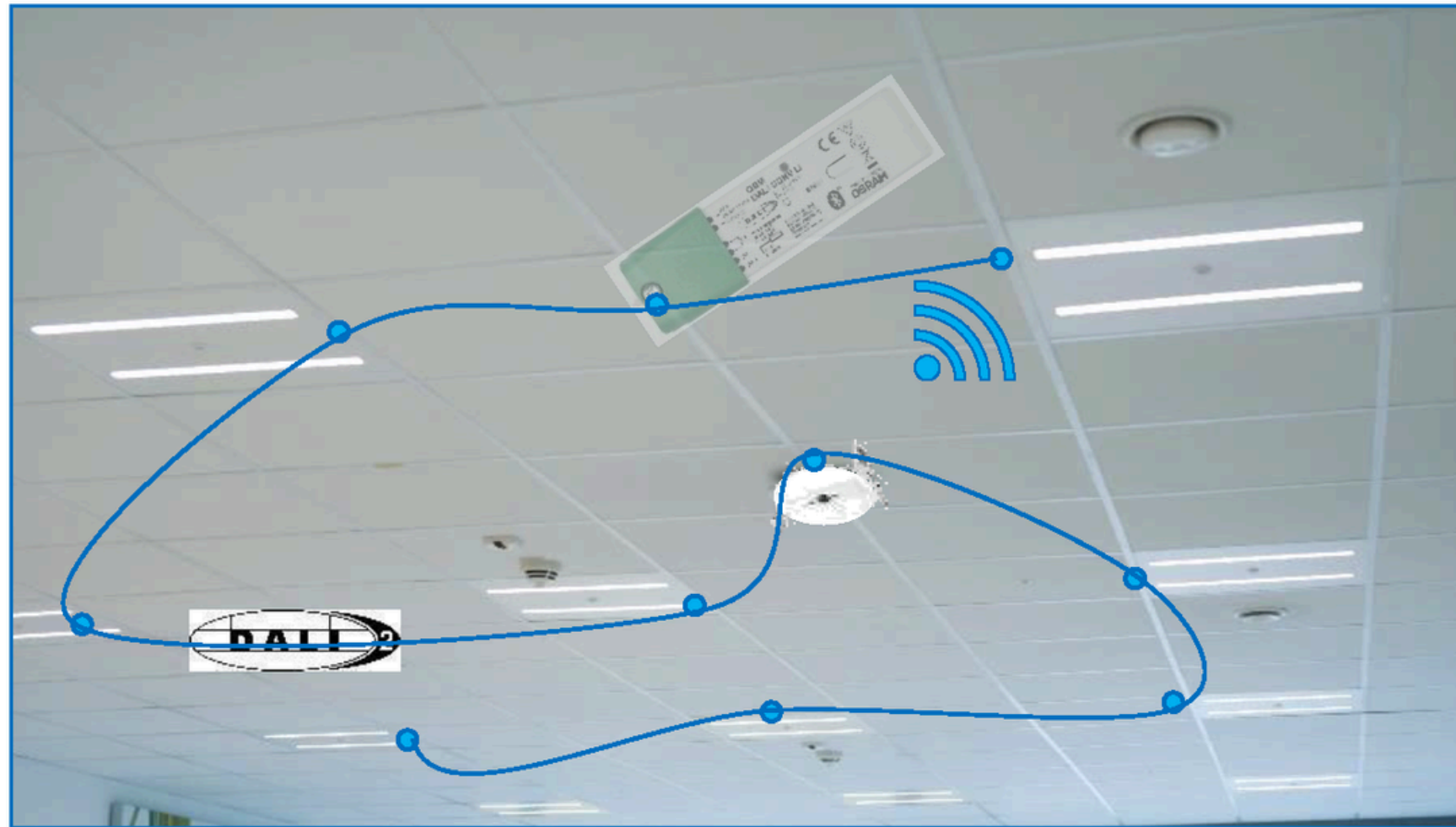


QBM DALI CONV
DALI-2 sensor
DALI-2 LED driver



OSRAM HubSense®

SMART ceiling with QBM DALI CONV



Behind the false ceiling it would be necessary to install just one QBM DALI CONV can be connected via DALI to:

- all the DALI-2 luminaries (up to 32)
- one DALI-2 sensor



DALI LS/PD CI

Already existing DALI infrastructure can be reused!

Just connect the **QBM DALI CONV** and control it by your **HubSense mobile app**

Linear LED Drivers - OPTOTRONIC OT Wi

Non-isolated - OT Wi... D NFC L

Shaping the future - making wireless installations possible



TYPE	DIMENSIONS
35W	280 * 30 * 21
75W	
100W	

TYPE	RANGE I	RANGE V	PHYS. MIN DIM
35W	75 - 400mA	54 - 240 V	1mA
75W	250 - 750mA		1mA
100W	125 - 750mA		1mA

FAMILY / SYSTEM

- Non-isolated 35 / 75 / 100W linear drivers
- Available as Qualified Bluetooth® Mesh version
- Tuner4TRONIC programming
- Perfect match to HubSense® system

HIGHLIGHTS

- Wireless capability integrated
- Bluetooth SIG
- QBM: Luminaire Info & Monitoring Data
- Up to 10m coverage inside metal luminaires

BENEFITS

- 1...100% dimming
- Fully digital programmable by NFC incl. Box Programming
- Very wide operating window
- Very low ripple

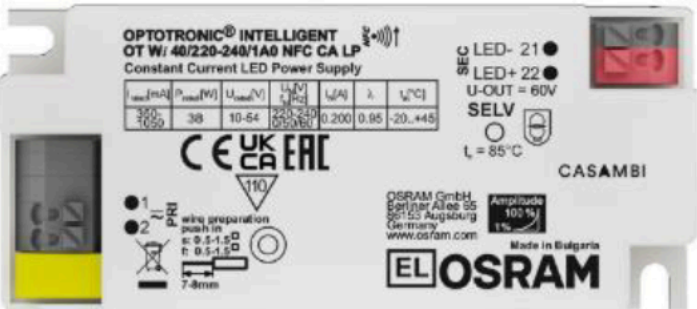
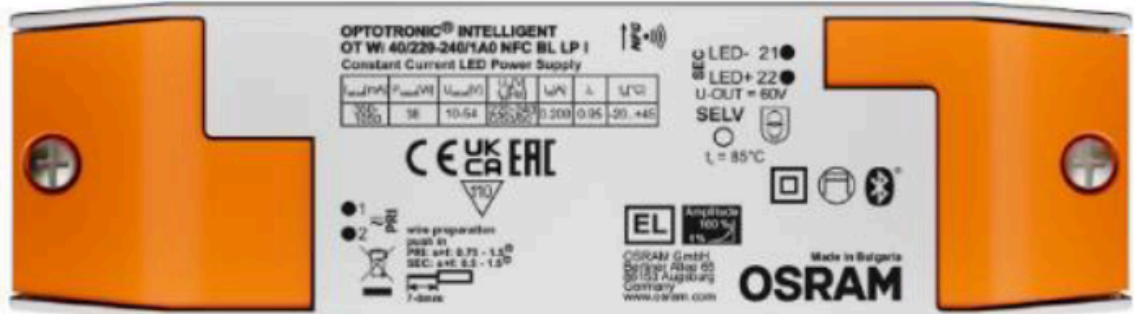
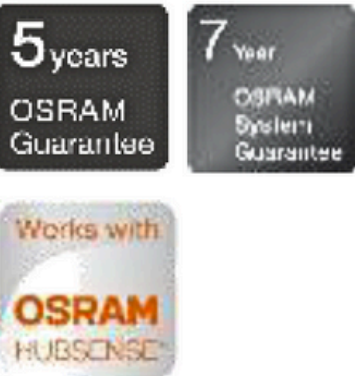


Compact LED Drivers - OPTOTRONIC

Intelligent NFC LP - OT Wi 15/25/40 NFC QBM LP (I)



Miniaturisation - wireless functionality - ready for IoT



TYPE	DIMENSIONS LP	DIMENSIONS LP I
15W	95 x 43 x 22	150 x 43 x 22
25W		
40W		

TYPE	RANGE I	RANGE V
15W	150 - 1050mA	10 - 54 V
25W	180 - 700mA	
40W	350 - 1050mA	

FAMILY / SYSTEM

- Non-isolated 35 / 75 / 100W linear drivers
- Available as Qualified Bluetooth® Mesh version
- Tuner4TRONIC programming
- Perfect match to HubSense® system

HIGHLIGHTS

- Wireless capability integrated
- Bluetooth SIG
- QBM: Luminaire Info & Monitoring Data
- Up to 10m coverage inside metal luminaires

BENEFITS

- 1...100% dimming
- Fully digital programmable by NFC incl. Box Programming
- Very wide operating window
- Very low ripple

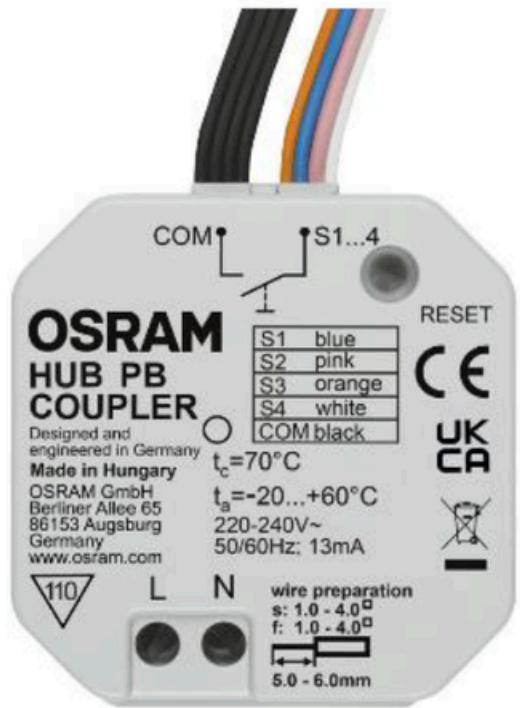


OSRAM HubSense®

Push Button Coupler, Mains powered



HUB PB Coupler



PRODUCT FEATURES

- Works with OSRAM HubSense®
- Push Button Coupler
- Enable free selection of switch frames
- Support up to 4 potential free push buttons
- Designed for mounting in deep flush device boxes

MAIN FEATURES	
Input Voltage	220 0 240 Vac
Input Current	13 mA
Maximum of drivers	10 m
Wireless Range (typ)	Qualified Bluetooth® Mesh by SILVAIR*
Wireless Protocol	No
Dimension	48 x 49 x 22 mm
System Wattage	0.5 W
Supported Push Buttons	4
Wire Length	250 mm
Reset	Yes



OSRAM HubSense®

Push Button Coupler, Mains powered



HUB PB Coupler



PRODUCT FEATURES

- Works with OSRAM HubSense®
- Qualified Bluetooth® Mesh Wireless Sensor Module
- Wireless Sensor Module for Office Luminaire
- Daylight and Occupancy Detection
- Support up to 8 DALI OSRAM LED Driver (Part - 207)
- Flush box included

MAIN FEATURES	
Input Voltage	220 - 240 Vac
Max. Input Current	14 mA
Wireless Range (typ)	10 m
Wireless Protocol	Qualified Bluetooth® Mesh by SILVAIR*
EnOcean switch support	Yes (EWSSB and EWSDB)
Dimension	Ø = 105 mm, h = 45 mm
Occupancy Range	Ø 4 m minor movement @ 3 m height Ø 8 m major movement @ 3 m height
Occupancy Height	<4 m
Ambient Light Sensor	Yes, 5 - 1400 lux

*Preliminary in planning



*Technology Partner: SILVAIR

OSRAM HubSense®

QBM Presence Highbay Daylight Sensor, Mains powered



QBM 220 - 240 LS/PD HB



PRODUCT FEATURES

- Works with OSRAM HubSense®
- Qualified Bluetooth® Mesh Wireless Sensor Module
- Wireless Sensor Module for Office Luminaire
- Daylight and Occupancy Detection
- Support up to 8 DALI OSRAM LED Driver (Part - 207)
- Recessed mounting box included

MAIN FEATURES	
Input Voltage	220 - 240 Vac
Max. Input Current	14 mA
Wireless Range (typ)	15 m
Wireless Protocol	Qualified Bluetooth® Mesh by SILVAIR*
EnOcean switch support	Yes (EWSSB and EWSDB)
Dimension	Ø = 105 mm, h = 66.5 mm
Occupancy Range	Ø 22 m major movement @ 14 m height
Occupancy Height	<14 m
Ambient Light Sensor	Yes, 5 - 1400 lux

*Preliminary in planning



*Technology Partner: SILVAIR



Promote HubSense[®] and collaborate with **inventronics**



inherits the professional assurance of a strongly resourced and capable team

HubSense[®]:

GIVES YOU:

- QBM integrates BLE, meaning strong reliable wireless technology
 - Distributed intelligence, no single point of failure in the system
 - Robust, certified security and not hackable
 - Localised, offline emergency self-test and reporting
 - Open Protocol / Open API
-



DRK
LIGHTING
LIGHT THE FUTURE

inventronics