Bluetooth® 5.0 SIG Mesh Eco-system

Hytronik is the market leader for motion sensor technology in the professional lighting industry. We deliver high quality controls to the high-end professional lighting manufactures worldwide. With our strong R&D competence, we are now gearing towards Bluetooth lighting control solutions and building up a complete ecosystem of Bluetooth products.

Our eco-system consists of motion sensors, LED drivers, emergency control gear, dimmers, gateway and other components such as touch panel and quick connection box. We also cooperate with Koolmesh, Casambi, Silvair and Enocean to provide a wider range of Bluetooth lighting solutions.

With server based in Europe, our cloud service supports remote control via gateway, emergency report generation, remote monitoring, and IoT features etc. Meanwhile, we are open for all kinds of customization possibilities at affordable prices, including the product, app, cloud and server.

With dedicated phone/tablet app and web platform, Hytronik Bluetooth solution caters for small-scale installations such as residential and large-scale installation in commercial and industrial applications. For new projects, or retrofit upgrade projects, the Bluetooth products have significantly reduced the labor cost for wiring thanks to the wireless mesh networking. Besides, not only does our powerful solution fulfill the challenging requirements in real application, what's more, the whole setup and commissioning process has been simplified with synergy of intuitive user interface and strong technical support from Hytronik team. Meanwhile, future maintenance and on-site troubleshooting has never been so quick, simple, and flexible!

Highlight Features with our 🅱 Bluetooth® Products

NEW! Quick setup mode & advanced setup mode

NEW! Device social relations check

NEW! Staircase function for quick master & slave setup

NEW! Floorplan feature to simplify project planning

NEW! Web app/platform for dedicated project management

NEW! Remote control via gateway support HBGW01

NEW! Deep environment learning

Grouping luminaires via mesh network

Scenes

Dusk/Dawn photocell (Twilight function)

Tri-level control

Daylight harvest

Circadian rhythm (Human centric lighting)

Push switch configuration

Detailed motion sensor settings

Schedule

Astro timer (sunrise and sunset)

Power-on status (memory against power loss)

Offline commissioning

Bulk commissioning (copy and paste settings)

Different permission levels via authority management

Network sharing via QR code or keycode

Interoperability with Hytronik Bluetooth product portfolio

Compatible with EnOcean BLE switches

Internet-of-Things (IoT) featured

Device firmware update over-the-air (OTA)

Continuous development in progress…
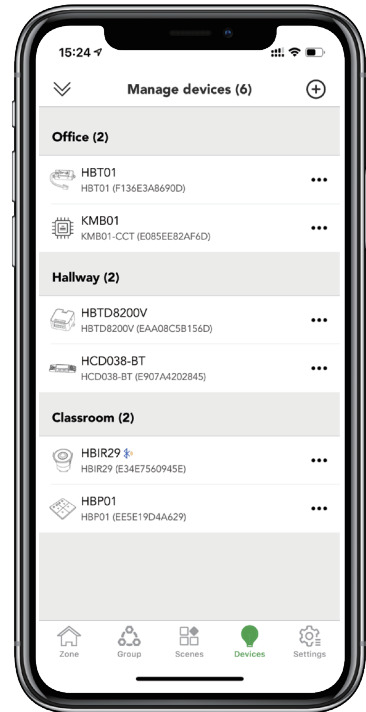
🅱 **Bluetooth 5.0 SIG mesh**
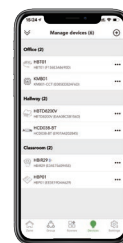
iOS 10.0 or later

Android 5.0 or later
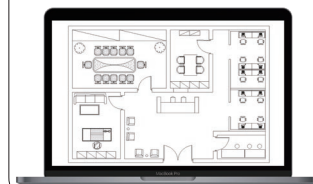
Web app/platform:
iot.koolmesh.com

✸ Bluetooth® 5.0 Motion Sensors for OEMs

Motion Sensor: Integrated Version

HC005S/BT (220V-240V)
HC419S/BT (120V-277V)

HCD405/BT
(220V-240V)
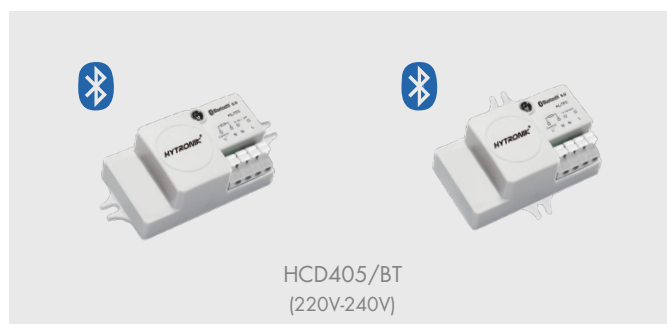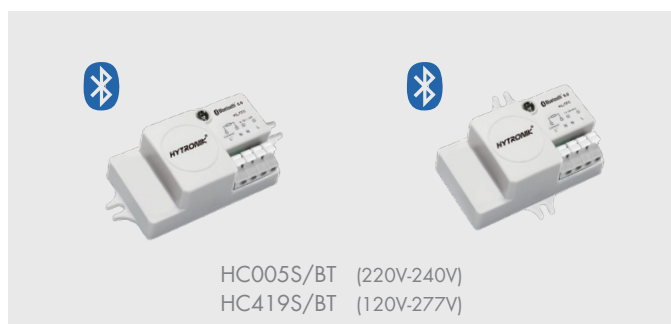
Simple, and powerful!

- Microwave (HF) sensor with On/Off control
- Mesh network – perfect replacement for RF
- Daylight control always prior to motion

Super Compact!

- Microwave (HF) sensor with DALI output
- Tri-level dimming & Daylight harvest
- Daylight control always prior to motion

Motion Sensor: Detached Version
For metal luminaire design

Control Base + Bluetooth Sensor Head

1 HC038V	2 HCD038	3 HCD038/P
• 1-10V output • 220V-240V • 1 push terminal	• DALI output • 220V-240V • 1 push terminal	• DALI output • 220V-240V • 2 push terminals
4 HC438V	5 HCD438	
• 1-10V output • 120V-277V • 1 push terminal	• DALI output • 120V-277V • 1 push terminal	

+

6 types of Microwave/PIR sensor head options!

Motion Sensor: Detached Version
For plastic luminaire design

Bluetooth Control Base + Sensor Head

1 HC038V/BT	2 HCD038/BT
• 0/1-10V output • 220V-240V • 1 push terminal	• DALI output • 220V-240V • 2 push terminals
3 HC438V/BT	4 HCD438/BT
• 0/1-10V output • 120V-277V • 1 push terminal	• DALI output • 120V-277V • 2 push terminals

+

11 types of Microwave/PIR sensor head options!

Bluetooth® 5.0 Stand-alone Motion Sensors for Projects

Bluetooth PIR Motion Sensors

1 DALI Channel Output

HBIR29

Human Centric Lighting!

1 DALI Channel Output

HBIR31

Tri-level control & Daylight harvest

2 DALI Channel Outputs

HBHC25

Human Centric Lighting!

2 DALI Channel Outputs

HBIR32

Tri-level control & Daylight harvest

2 Trailing Edge Channel Outputs

HBIR36

Tri-level control & Daylight harvest

Touch Panel

HBP02

Designed to fit into electrical/junction box

Accessories: Lens & Blind Options

Lens Option 1
(Standard detection)

Lens Option 2
(Reinforced detection)

Lens Option 3
(High-bay detection)

Blind Option 1
(Aisle detection)

Blind Option 2
(180° detection)

Bluetooth® 5.0 Quick Connection Box

Model	Plug Type	Bluetooth	Channel Outputs
QCB01	Wieland	N/A	8 Channels
QCB02		Built-in	6 Channels
QCB03	Wago	N/A	8 Channels
QCB04		Built-in	6 Channels

Features

- Supports On/Off, Switch Dim, 1-10V, DALI and emergency control
- 2 Push switch inputs
- 2 hooks on plugs to secure good connection to the main socket
- Double terminals for loop-in and loop-out to the next quick connection box
- linect system enabled
- QCB02 & QCB04: 4 alternative Bluetooth modules of On/Off, 1-10V, trailing edge and DALI

Hytronik provides various options of plug cables. Plugs on both ends can be fitted either with Wieland plugs, Wago plug or just loose ends. Meanwhile, we also offer flexible cable options from 3-core to 6-core, length from 1 meter to 20 meters.
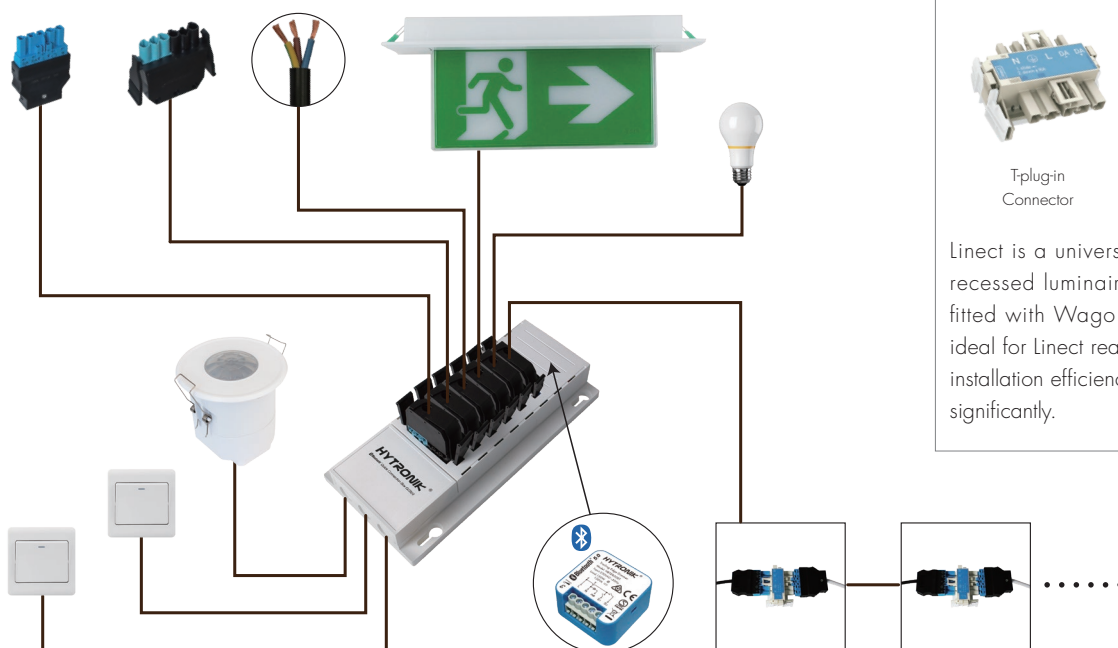
Connecting to linect System

Wago plug

+

T-plug-in Connector

Mains Supply Terminal
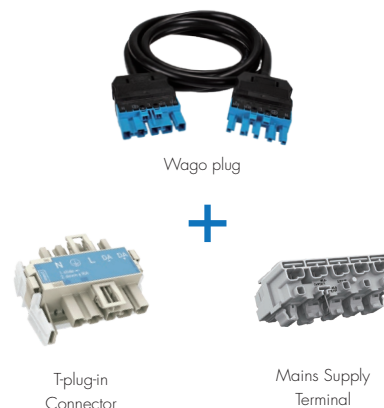
Linect is a universal connection system for recessed luminaires. With Hytronik cable fitted with Wago plug, our QCB series is ideal for Linect ready luminaires to maximize installation efficiency and minimize labor cost significantly.

Typical Application for Office (Human Centric Lighting)
——One-stop solution in Hytronik!

Different from other complex system, Hytronik offer a simple yet decentralized one-stop solution to achieve Human Centric lighting. It cuts at least 50% to 60% in costs as compared to traditional complex wiring system. This solution is based on Bluetooth together with an intuitive and portable app; it does not require complicated PC tools to set up and configure. What's more, our Bluetooth solution is futureproof with OTA upgrade capability. With services of tailor making Bluetooth solution including app, products, server and cloud, this solution brings flexibility and versatility to adapt to each customer's requirements at affordable prices.

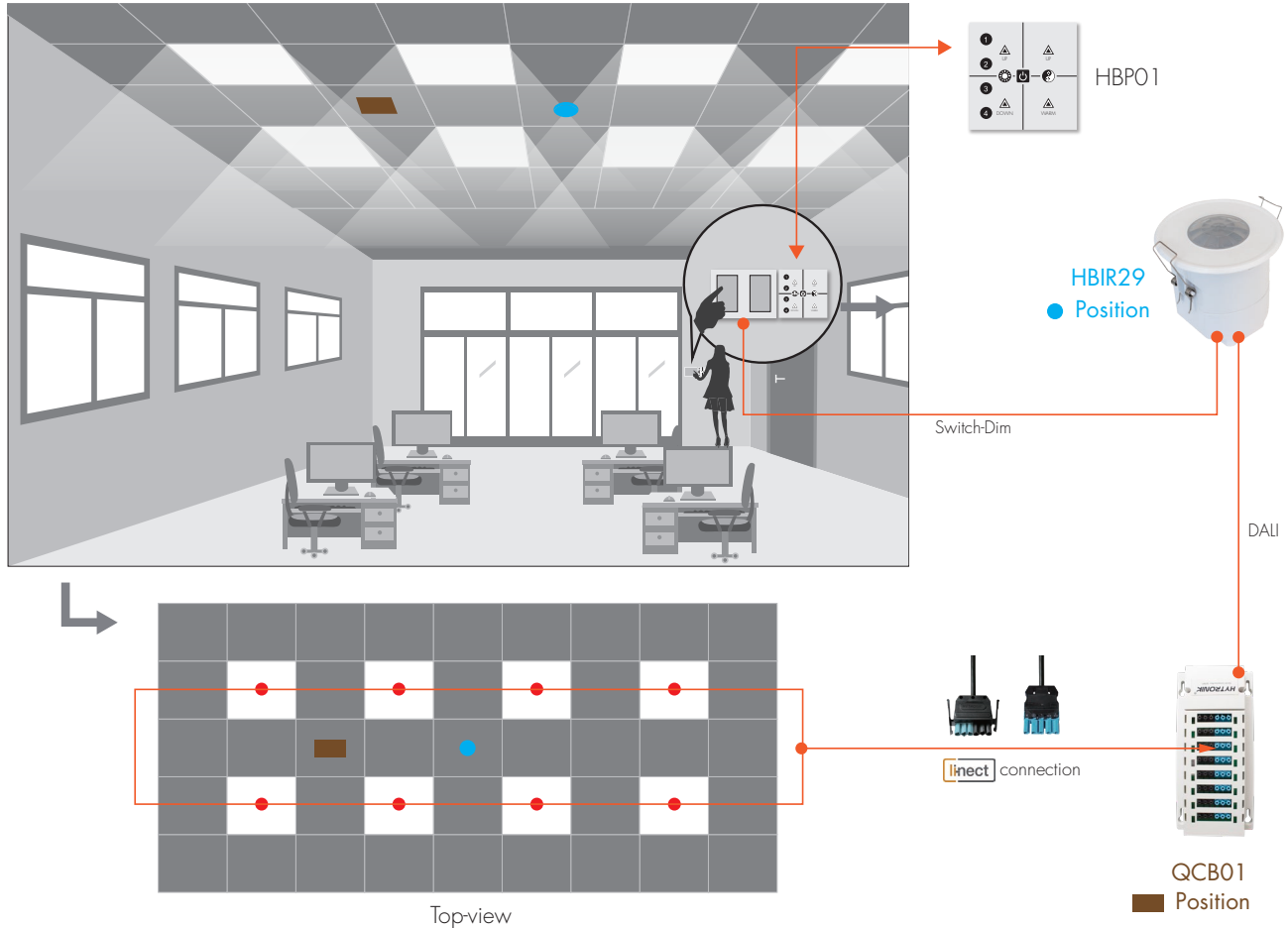| What you need	What you get
HBIR29 x 1	• PIR motion sensor • Human Centric Lighting Control • Bluetooth enabled and controllable via app • Daylight Harvest
Push switches x 2	• Manual control: turning on/off, brightness adjustment, colour tuning, recall scenes etc.
HED8045 x 8 for LED panels	• DALI-2 DT8 LED driver (Can also be any other DALI DT8 drivers in the market)
HBP01 x 1 (Optional)	• Bluetooth touch panel • Designed to fit into electrical/junction box • Can recall up to 6 scenes • Brightness adjustment & colour temperature tuning
QCB01 x 1 or QCB02 x 1 with cables and plugs (Optional)	• Labour cost saved significantly • Linect wiring system enabled • Simplify wiring on site via plug 'n' play • Hassle-free maintenance after installation
HBGW01 gateway x 1 (Optional)	• Accessibility to remote monitor & control • Internet-of-Things (IoT) featured
Free smartphone app & PC web platform	• Future-proof via OTA upgrade • Floorplan feature to simplify project planning • Off-line commissioning • Open for all kinds of customization possibilities
Free cloud & server services	• Settings data backup • Europe based server • Accounts security • Open for all kinds of customization possibilities

HBP01

HBIR29
● Position

Switch-Dim

DALI

linect connection

QCB01
■ Position

Top-view

Bluetooth® 5.0 Emergency Drivers & Inverter

HBEM02 (Inverter)

Option ①: With nothing Attached to – A traditional emergency inverter (with self-test)

Option ② : Attach HBT04 – Becomes a Bluetooth emergency inverter (without motion sensor)

HBT04

HBEM01   25W

Option ①: With nothing Attached to – A traditional emergency driver (with self-test)

Option ② : Attach HBT04 – Becomes a Bluetooth emergency driver (without motion sensor)

HBT04

HBEM03   45W

Option ③: Attach HBT03 – Becomes a Bluetooth emergency driver + HF motion sensor

HBT03

5-in-1 !
Bluetooth + driver + emergency + motion sensor + daylight sensor

---

14:02		100%
< HBEM01		

V:1.3.1.7

- Luminaire >
- Emergency ⌄
  - → Stats >
  - → Report
  - → Settings
- Montion Senson >
- Daylight Sensor >
- Push (1) >
- Push (1) >

Status

Test satus	Pass
Test Date	2020 - 02 - 18
Test Duration	30 s
Battery Status	Charging
Current Battery Time	>3h discharge
Next Test Duration	3 h
Next Test Date	2020 - 03 - 18

Statistics

◆ General:

Battery Discharged times	2
Total hours of emergency	1.5h
Funtion test	14 times
Duration test	3 times
Battery Activation Date	2019 - 01 - 22

◆ Fault Dettcted:

Load Short-circuit	0 times
Load Open-circuit	0 times
Battery Short-circuit	0 times
Battery Open-circuit	0 times

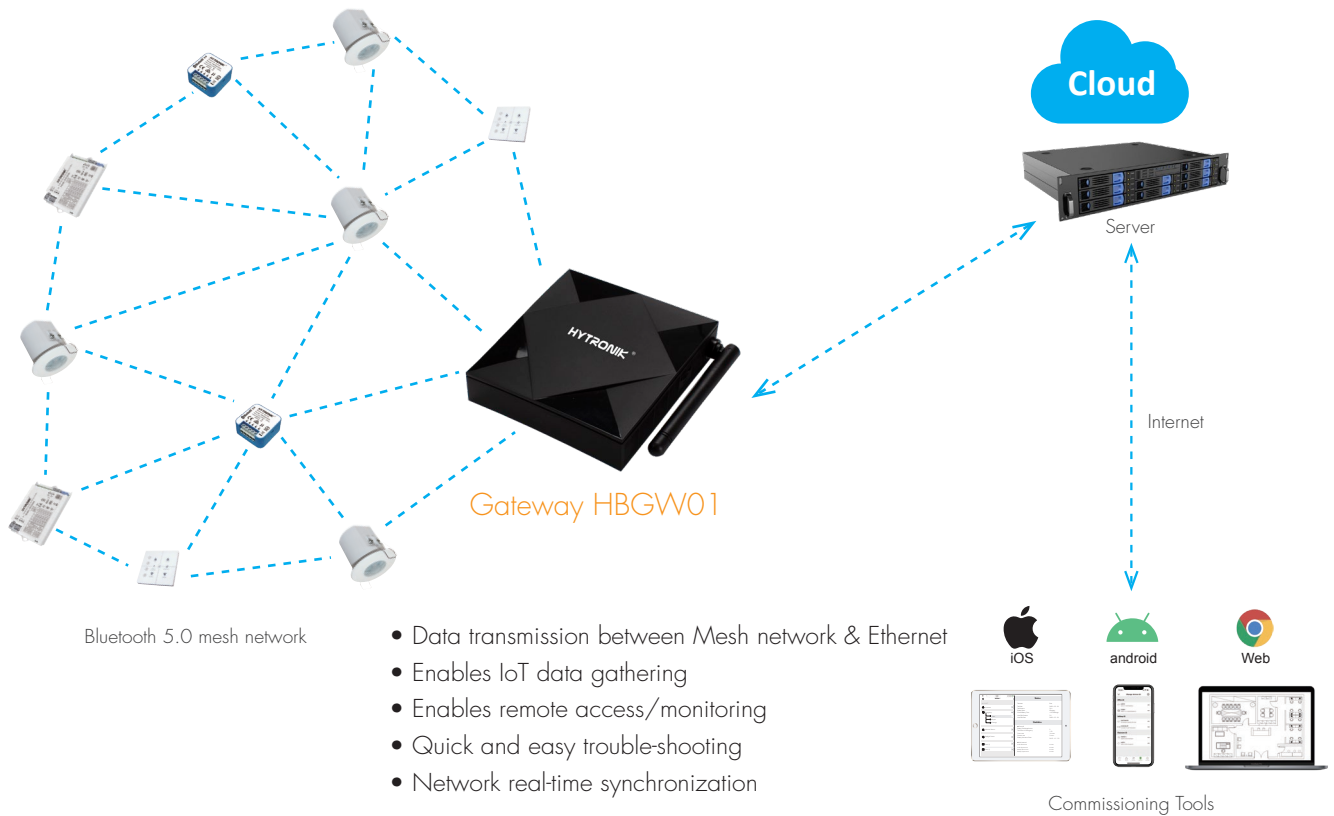**Features:**

* Emergency watt:2W/3W/4W/5W

* Works with LiFePO4 battery

* Various emergency working mode:
  - Normal mode
  - Rest mode
  - Inhibit mode
  - Extended emergency mode

* Monthly / Quarterly / Yearly self-test with auto report generation

* Automatic email notification when detecting fault

* Real-time site alert

* Retrievable usage data and history record

Bluetooth® 5.0 Gateway & Web app platform

Cloud

Server

Internet

Gateway HBGW01

Bluetooth 5.0 mesh network

iOS   android   Web

- Data transmission between Mesh network & Ethernet
- Enables IoT data gathering
- Enables remote access/monitoring
- Quick and easy trouble-shooting
- Network real-time synchronization

Commissioning Tools

Web app platform

iot.koolmesh.com

Floor-plan

Data & Analysis

- Smart control for connected lighting
- Intelligent building management system

- Internet-of-Things (IoT) featured
- Auto report-generation

*(The images are for demostration purpose only)

Bluetooth® 5.0 Dimmers / Receivers / Controllers

Bluetooth 5.0 Dimmers / Receivers for Projects

ON/OFF Relay Switch

HBTD8200S
※400VA max. LED load

0/1-10V Version

HBTD8200V
※400VA max. LED load

DALI Version

HBTD8200D
※100mA max. 50 LED drivers

Trailing Edge Version

HBTD8200T / HBTD8200T2
※150VA max. / 2 x 100VA max

Trailing Edge Example

Out with the old….

Replace the triac dimmer switch face plate with retractive switch type.

In with new….

The retractive switch inputs may be configured for on/off control, dimming control, and even scene recall!

* Excellent for domestic home-use or retrofit upgrade!

Bluetooth 5.0 Receiver Nodes for OEM

ON/OFF Relay Switch

HBTD8200S/F
※400VA max. LED load

0/1-10V Version

HBTD8200V/F
※400VA max. LED load

DALI Version

HBTD8200D/F
※100mA max. 50 LED drivers

Trailing Edge Version

HBTD8200T/F
※ 150VA max. LED load

* Two Switch-Dim (PUSH) terminals

* Designed to be placed inside lighting fixture

* Master & Slave control by working with motion sensors

* A perfect built-in Bluetooth controller for OEMs!

◉ Bluetooth® 5.0 LED Drivers

Dimmable Version

HED1009/BT   9W

HED6010/BT   12.5W

HED1025/BT   25W

HBE9028/KD   28W
*Sensor pluggable!

HED7030/BT   30W
*Sensor pluggable!

HED1040/BT   40W
*Sensor pluggable!

HED1045/BT   45W
*Sensor pluggable!

Tunable White Version (with Human Centric Lighting)

HED8025/BT   25W

HED8025V/BT   25W
(Constant Voltage)

HED8030/BT   30W

HED8040/BT   40W
*Sensor pluggable!

HED8045/BT   45W
*Sensor pluggable!

Bluetooth® 5.0 LED Driver+Sensor Combo

HED1025   25W
(DALI DT6)

HED1045   45W
(DALI DT6)

HED1050L 50W
(DALI DT6)

HED1050H 50W
(DALI DT6)

HED1080H 80W
(DALI DT6)

HEC7030/BF 30W
(DALI-2 DT6)

HED8040 40W
(DALI-2 DT8)

HED8045 45W
(DALI-2 DT8)

***What is Hex-drive?**

Hex-drive is the flagship product range of Hytronik LED drivers, designed to integrate various functions for maximizing luminaire design flexibility. This driver series comes with an RJ12 connector which is ready for attaching a wide range of Bluetooth sensor "heads", ranging from microwave (HF) to PIR, from low-bay to high-bay…

When motion sensor unplugged, the Hex-drive alone is a standard DALI compliant driver, possessing 1-10V and Switch-Dim (PUSH) dimming capability as well. All Hex-drive models have multiple current selection feature via DIP-Switch settings.

+

6 types of Microwave/PIR sensor head options!

Bluetooth 5.0 Driver + Sensor

HBE9028/KD   28W

HED7030/BT   30W

HED8040/BT   40W

HED8045/BT   45W

+

11 types of Microwave/PIR sensor head options!

DALI 2 DT6 & DT8 LED Drivers

Dimmable Version

HED1009/D2 9W (DALI-2 DT6)	HED6010/D2 12.5W (DALI-2 DT6)	HED1025/D2 25W (DALI-2 DT6)
HEC7030/BF 30W (DALI-2 DT6) *Sensor pluggable!	HED1040/D2 40W (DALI-2 DT6)	HED6045/D2 45W (DALI-2 DT6)

Tunable White Version (with Human Centric Lighting)

HED8025 25W (DALI-2 DT8)	HED8025V 25W (DALI-2 DT8)
HED8040 40W (DALI-2 DT8) *Sensor pluggable!	HED8045 45W (DALI-2 DT8) *Sensor pluggable!

* Sensor-Dim: This function is available for the drivers with "sensor pluggable" feature. There are total 6 types of super-mini sensor options to combine with, ranging from microwave (HF) to PIR, from low-bay to high-bay...
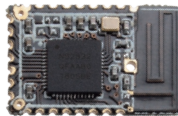
+

6 types of Microwave/PIR sensor head options!

Partointnership

Koolmesh

Bluetooth® 5.0 SIG Mesh Solution

DALI 2 DT6 DT8

KMB01 BLE module

KMD01 DALI-2 module

Customization

APP development
Logo replacement
Skin selection
GUI co-design
Functionality adjustment
Free regular maintenance

CASAMBI

Stand-alone PIR Motion Sensor

HBIR30/CA

Detached design Motion Sensor

HCD038/CA

Sensor head options

SILVAIR

Stand-alone PIR Motion Sensor

HBIR29/SV

Detached design Motion Sensor

HCD038/SV

Sensor head options

EnOcean
Self-powered IoT

Easyfit Bluetooth®
Single / Double Rocker Wall
Switch EWSSB / EWSDB

※ All Hytronik Bluetooth products fully support
EnOcean BLE switch functions!

Approvals and 5-Year Warranty

Hytronik products are designed to international safety and performance standards as applicable and are manufactured in our ISO9001 factor to our own stringent requirements.

It is our policy to seek 3rd party certification with a recognised international body on our standard product range so you can supply with confidence.

5-Year Warranty

All Hytronik products are supplied with a 5-year warranty against defect in design or manufacture. The warranty applies to all electronic control gears supplied by Hytronik and is applicable to the party to which the sale was made. The warranty is not transferable to a 3rd party and compatibility with external components are the responsibility of the finished goods manufacturer.

With today's multi-national sourcing strategies, we offer an unrivalled universal warranty with support available in regions where Hytronik has its own office or authorized representation, regardless of where the Hytronik product was purchased. Furthermore, we operate a 24-hour response policy to any claim.

The full warranty policy is available upon request or from our website.