HBT01

Bluetooth HF Lowbay | Photocell Advance | RJ12 connector to control body



Benefits

Expandable: RJ12 Plug'n'Play adds sensing to compatible control units

Versatile: Tri-level dimming + Daylight harvest + Ciradian Rhyhm

Wireless: App-based setup for fast commissioning

Applications

Linear Luminaires · Integrated Lighting Controls

Occupancy Control · Daylight Harvest · HCL

Offices · Classrooms · Commercial Spaces

Check Out the Complete System Solution on the Website:
https://www.hytronik.com/product/HBT01

Product Description

HBT01 is a HF sensor head and compatible with the Tri-level Dimming Daylight Harvest and Human Centric Lighting. It can work with the linear shaped control base such as HC038V HCD038HC438V HCD438 and HCD038/P. It offers powerful number of Plug'n'Play feature options to expand the flexibility of luminaires design.

Functions and Features

See additional details at the end of datasheet



Daylight Harvest



Photocell Advance



RJ12 Connection



Tri-level Dimming

Specifications

Main Capabilities	
Connector Type	RJ12

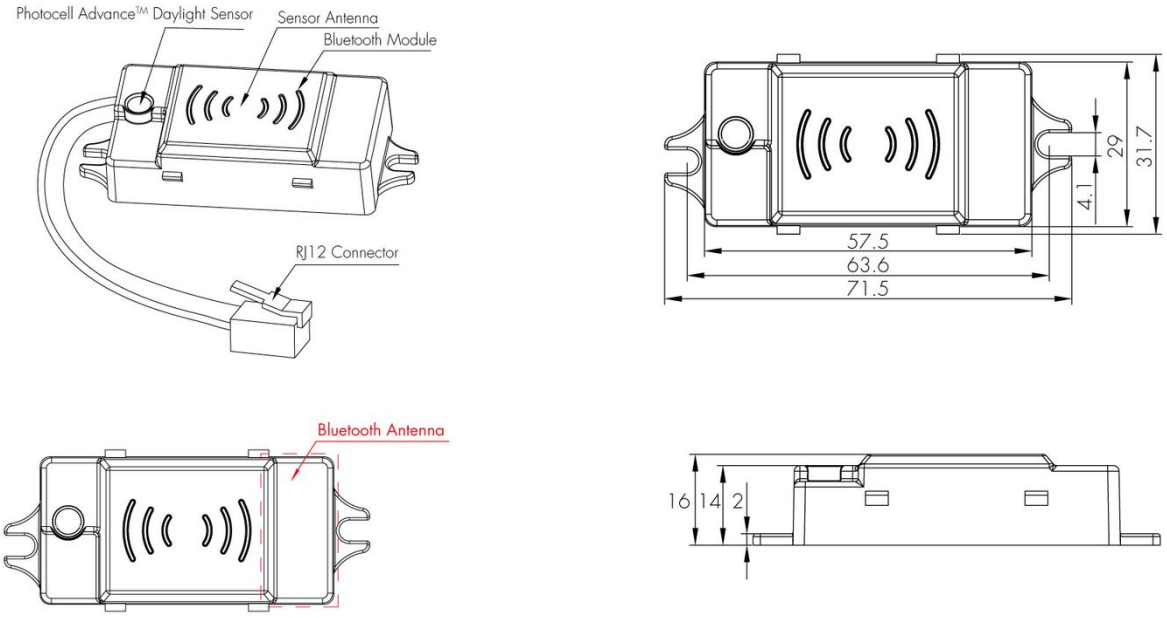
Sensor Data	
Detection angle	360°
Max. Detection range (Diameter)	8.0 m
Maximum Mounting Height	3.0 m
Detection area	50 m^2
Sensitivity	10%/ 30% /50% /75%/ 100%
HF operating frequency (Ghz)	5.8Ghz+/-75MHz
Detection Methods	Microwave (MW)

Electrical Data	
Bluetooth Platform	Nordic nRF52832
Bluetooth frequency	2.4 GHz - 2.483 GHz
Bluetooth range (Phone to Device)	10-30m
Bluetooth transmit power	4 dBm
Bluetooth system	Koolmesh
Operating voltage range	5 VDC

Specifications

Technical	
Product weight	30.0 g
Product height	16.0 mm
Product length	71.5 mm
Product width	31.7 mm
Insulation class	Class II
Mounting hole	29.0 mm
Ambient temperature	-20 ~ +50 °C
Storage temperature	-40 ~ +70 °C
Humidity max	10 ~ 90%
Case Temp.max	60.0 °C
IP Rate	IP20

Technical Drawing

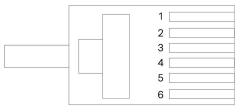


The Bluetooth antenna is located at the marked end of the device.
· Keep the antenna area clear of metal or conductive materials.
· Maintain at least 10 mm clearance around the antenna whenever possible for optimal wireless performance.
· Avoid installing the antenna section inside a metal enclosure or behind large metal structures.

⚠ Wiring Guidelines

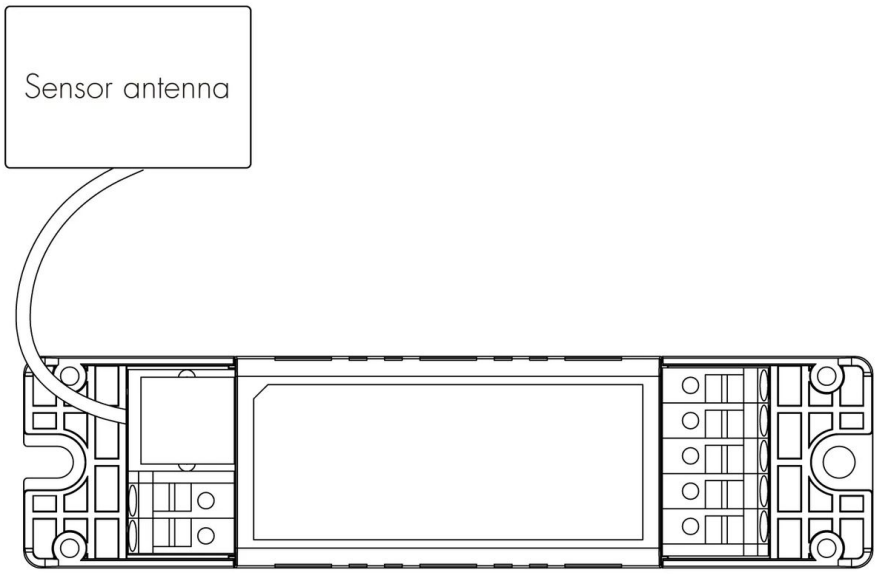
1. Installation by a qualified electrician only and in accordance with local electrical regulations.
2. Disconnect mains power before installation, wiring, maintenance or replacement.
3. Failure to follow the wiring diagram may result in product damage and malfunction.

Wire Preparation



The connector is an RJ12 6P6C plug, with pin assignment as follows: Pin 1 is PUSH2(Input), Pin 2 is VCC(+5V), Pin 3 is PUSH1(Input), Pin 4 is GND, Pin 5 is DALI (DALI Signal Output), and Pin 6 is DALIR.

Wiring Diagram

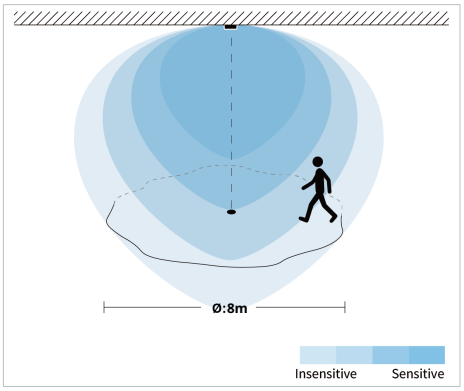


Detection Range

Single Person Walk (Ceiling mount)

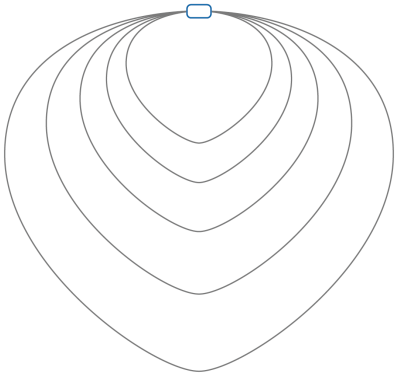
The data above is tested under following conditions:
• Single person walking
• Sensor not connected to any driver that may have soft-on period
• Testing temperature Ta = 20°C
• The detection range is heavily in uenced by sensor placement (angle) and different walking paces.
It may be reduced to 2m(diameter) & 3m(height) under certain conditions (walking across).

Detection example 3m mounting height:



	Sensitivity
H[m]	100%
	{Ø}
3	8

Detection schematic diagram



Commissioning Instructions and Precautions

1. Installation by a qualified electrician only and in accordance with local electrical regulations.
2. Disconnect mains power before installation, wiring, maintenance or replacement.
3. Failure to follow the wiring diagram may result in product damage and malfunction.

Warning: For additional important documents, including installation precautions, product guidelines, and guarantee conditions, please refer to the official downloads.

https://hytronik.com/service/downloads

Options

Compatible products (for full functionality)



HC038V

Control unit | 1-10V | Attachable sensor heads
www.hytronik.com/product/HC038V



HC438V

Control unit | 1-10V Dimming | Attachable sensor heads | US Certified
www.hytronik.com/product/HC438V



HCD038

Control unit | DALI with PSU | Attachable sensor heads
www.hytronik.com/product/HCD038



HCD038/P

Control unit | DALI with PSU | Attachable sensor heads
www.hytronik.com/product/HCD038-P



HCD438

Control body | DALI with PSU | Attachable sensor heads | US Certified
www.hytronik.com/product/HCD438



HEC7030/BF

DALI DT6 LED Driver (CC) 30W | Optional Bluetooth Sensor Head | Built-in version
www.hytronik.com/product/HEC7030-BF



HED1025

DALI LED Driver 25W (CC) | Dimmable | Built-in version
www.hytronik.com/product/HED1025



HED8045

DALI-2 DT8 LED Driver 45W (CC) | Tunable white | Built-in/Stand alone
www.hytronik.com/product/HED8045

Koolmesh - Operating guide

Bluetooth

Smartphone(ios) Smartphone (Android) iPad Web

For additional information, including project and network, device, and scenes, please refer to: http://faq.koolmesh.com/

Shared Koolmesh App Features

- Alert for excess lux / temperature / humidity via multi-meter HBLM01
- Astro timer (sunrise and sunset)
- Bulk commissioning (copy and paste settings)
- Compatible with Shelly energy metering
- Continuous development in progress...
- Device firmware update over-the-air (OTA)
- Device social relations check
- Different permission levels via authority management
- Floorplan feature to simplify project planning
- Grouping luminaires via mesh network
- Internet-of-Things (IoT) featured
- Koolmesh Pro iPad for on-site configuration
- Network sharing via QR code or keycode
- Offline commissioning
- One-key device replacement
- Quick setup mode & advanced setup mode
- Remote control via Hytronik gateway & touch screen HPAD-TSJASE1
- Scenes
- Schedule
- Staircase function for quick setup
- Test mesh network connection quality
- Web platform for project deployment & data analysis

Device-specific Koolmesh App features

- Adjustable motion & static sensitivity & adjustable sensing distance
- Compatible with EnOcean kinetic switches
- Detailed motion sensor settings
- Dusk/Dawn photocell (twilight function)
- Dynamic daylight harvest auto-configuration
- Motion sensor range test
- Motion sensor trigger diagnosis

Bluetooth Mesh Network Installation & Device Access Range

1. Phone/Pad to Device Range (Bluetooth Connection)

During commissioning, the installer must remain within Bluetooth range of the target device when adding it via the App.

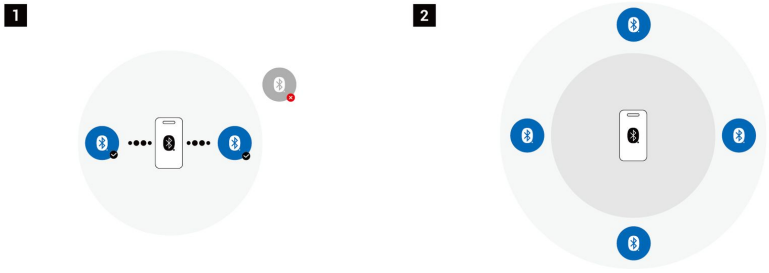
2. Device to Device Range (Mesh Network Communication)

Once commissioned, devices communicate through the wireless mesh network. Users can access and control all devices within the network when connected to any active mesh node.

Note:

a. Bluetooth range varies by product. Refer to the Specification section for details.

b. Actual communication range may vary depending on product type, obstacles, environmental conditions, and luminaire construction.



Bluetooth Network Components



HBGW02

Bluetooth Mesh Gateway | Ethernet or Wi-Fi 2.4GHz | wall/flat surface mounting
www.hytronik.com/product/HBGW02



HBGW02/D

Bluetooth Mesh Gateway | Dual-band Wi-Fi | wall/flat surface mounting
www.hytronik.com/product/HBGW02-D



HBGW03/R

BACnet Gateway | Dual-band Wi-Fi or Ethernet | DIN rail/wall/flat surface mounting
www.hytronik.com/product/HBGW03-R



HBGW04/R

Multi-protocol BMS Gateway | Dual-band Wi-Fi and Ethernet | DIN-rail Mounting
www.hytronik.com/product/HBGW04-R

HBKS01/W

Bluetooth Kinetic Switch | One-gang | Wireless Control
www.hytronik.com/product/HBKS01-W



HBKS01D/W

Bluetooth Kinetic Switch | Single Rocker | White Color
www.hytronik.com/product/HBKS01D-W

HBKS02/W

Bluetooth Kinetic Switch | Two-gang | White Color
www.hytronik.com/product/HBKS02-W



HBKS02D/W

Bluetooth Kinetic Switch | Double Rocker | White Color
www.hytronik.com/product/HBKS02D-W

HBKS03/W

Bluetooth Kinetic Switch| Three-gang | White Color
www.hytronik.com/product/HBKS03-W



HBLM01

Multi-meter | Bluetooth & NFC | Lux Measurements
www.hytronik.com/product/HBLM01

Functions and Features

Daylight Harvest

Right time, right place and the right amount of light! Daylight harvest (Also known as daylight regulating or daylight interaction) is a must in the future lighting norms. It automatically measures available natural light and adjusts artificial lighting output to maintain the target illuminance level. Using daylight sensor feedback, control signals are transmitted to the LED drivers via DALI or 0–10V interfaces, ensuring the required light output is delivered only when needed, improving visual comfort and reducing energy consumption.

Photocell Advance

This advanced daylight-sensing function accurately measures ambient light while minimising interference from the luminaire itself and distinguishing natural light from artificial light. It automatically switches lighting on or off and adjusts brightness according to the available daylight, providing reliable dusk-to-dawn control, improved visual comfort and greater energy efficiency.

RJ12 Sensor Connection

The product features an RJ12 plug-and-play connection interface, enabling quick, tool-free installation and easy maintenance. The standardized connector supports flexible integration between drivers, sensor bases and sensor heads, ensuring reliable communication and simplifying replacement or system expansion. This modular connection method enhances installation efficiency and reduces wiring complexity in both new and retrofit applications.

Tri-level Dimming



Hytronik's tri-level dimming products offer 3 levels of light control: 100% dimmed light off, with settable time periods between each phase, as well dimming level and daylight threshold.
*All Hytronik's tri-level dimming products can also be configured as bi-level control (by setting the stand-by period to infinity), so that the light always remains in the dimmed mode in absence for areas where there are safety, security or enhanced comfort requirements.

Check out for further explanation of features

https://hytronik.com/solutions/lighting-control-features