



# HYTRONIK HED6045/BT Bluetooth Dimmable LED Drivers with Bluetooth 5.0 SIG Mesh Owner’s Manual

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LED Drivers with 5.0 SIG Mesh  
HED6045/BT

Dimmable Driver & Constant Current

















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## Product Description














HED6045/BT is a Bluetooth dimmable LED driver, with maximum power output of 45W. It comes with Switch-Dim interface by using Push switch (retractive switch) and of course Bluetooth dimming interface. It is ideal for direct projects or new luminaires design for lighting manufacturers. With Bluetooth wireless mesh networking, it makes communication between luminaires much easier without time-consuming hardwiring, which eventually saves costs for projects. Meanwhile, simple device setup and commissioning can be done via koolmesh app.

## App Features

                 	Quick setup mode & advanced setup mode
	Floorplan feature to simplify project planning
	Web app/platform for dedicated project management
	Koolmesh Pro iPad version for on-site conguration
	Grouping luminaires via mesh network
	Scenes
	Detailed motion sensor settings
	Push switch configuration
	Schedule to run scenes based on time and date
	Astro timer (sunrise and sunset)
	Staircase function (primary & secondary)
	Internet-of-Things (IoT) featured
	Device firmware update over-the-air (OTA)
	Device social relations check
	Bulk commissioning (copy and paste settings)
	Power-on status (memory against power loss)
	Offline commissioning
	Different permission levels via authority management
	Network sharing via QR code or keycode

          	Remote control via gateway support HBGW01
	Interoperability with Hytronik Bluetooth product portfolio
	Compatible with EnOcean switch HBES01/W & HBES01/B
Continuous development in progress...	

**Hardware Features**

            	Switch-Dim
	Flicker free (1-100%)
	Bluetooth dimmable control
	Insulated terminal cover with cord restraint
	Active PFC design
	Logarithmic Dimming
	Linear Dimming
	Configurable constant current (CC) output via DIP switch
	Loop-in and loop-out terminals for efficient installation
	Open-circuit Protection
	Short-circuit Protection
	Overload Protection
	5-year warranty, designed for long lifetime up to 50,000 hours

\* Certain scenes which require external photocell can be achieved by using together with Hytronik Bluetooth sensors, such as HBIR29, HCD038/BT + sensor head etc.

## Bluetooth 5.0 SIG mesh



iOS



Android



for iOS



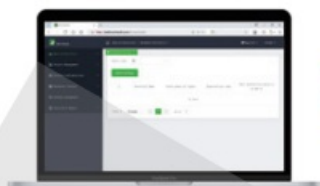
for Android

Smartphone app for both iOS & Android platform



for iPad

Koolmesh Pro app for iPad



Web



for Web

Web app/platform: [www.iot.koolmesh.com](http://www.iot.koolmesh.com)

 **EnOcean**  
Self-powered IoT




Fully support EnOcean self-powered switch module PTM215B (HBES01/W & HBES01/B)

### Output Configuration

1050mA	● ● ● ● ●
1000mA	● ● ● ● ○
950mA	● ○ ● ● ●
900mA	● ○ ● ● ○
800mA	● ● ● ○ ○
700mA	● ○ ● ○ ○
600mA	● ● ○ ○ ○
500mA	● ○ ○ ○ ○
350mA	○ ○ ○ ○ ○
	1 2 3 4 5



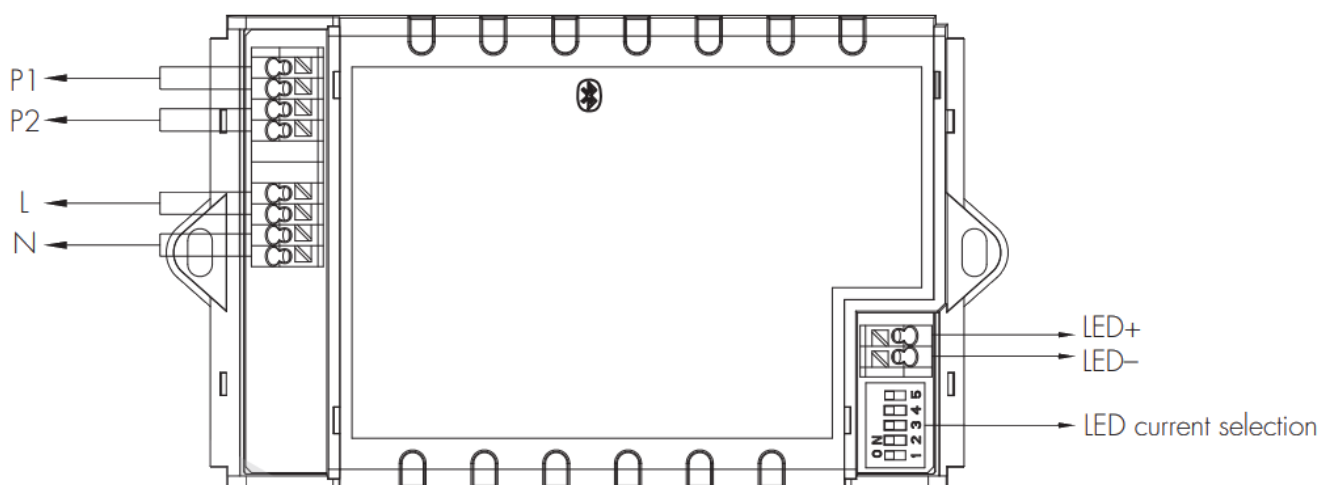
 **Warning:** Please make sure the correct current is selected before starting the driver!

## Technical Specifications

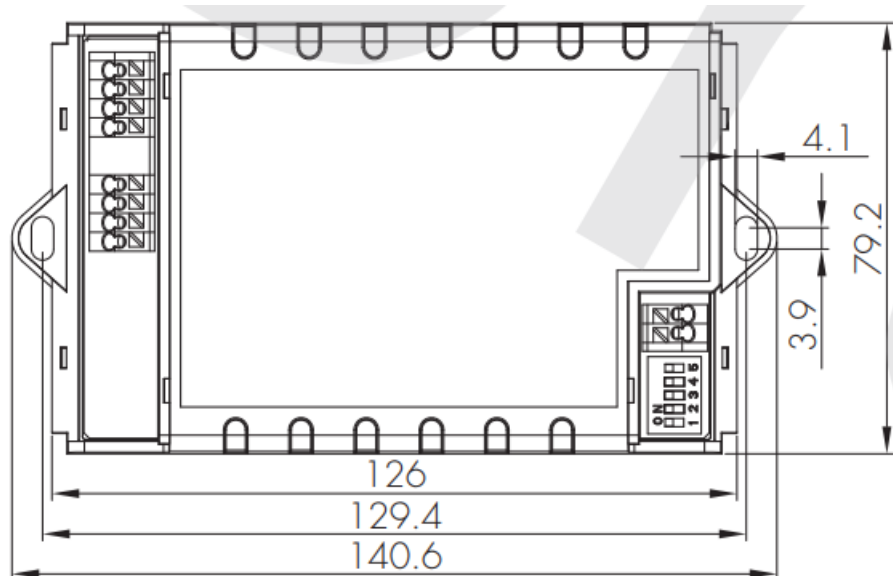
Bluetooth Transceiver	
Operation frequency	2.4 GHz – 2.483 GHz
Transmission power	4 dBm
Range (Typical indoor)	10~30m
Protocol	5.0 SIG Mesh
Input	
Mains Voltage	220~240VAC 50/60Hz
Mains Current	0.24~0.22A
Power Factor	0.95
Max. Efficiency	89%
Psb/Pno	<0.5W
Output	
Output Current	350mA~1050mA
Output Voltage	10-54V
Uout Max.	75VDC
Turn-on Time	<0.5s

Dimming Interface	Switch-Dim
<b>Environment</b>	
Operation Temp.	-20 ~ +50 °C
Case Temp. (Max.)	80 °C
IP Rating	IP20
<b>Safety and EMC</b>	
EMC Standard	EN55015, EN61547, EN61000-3-2/-3-3, EN300328, EN301489-1/-17, EN50663
Safety Standard	EN61347-1, EN61347-2-13
Dielectric strength	Input → output: 3000VAC / 5mA / 1min
Abnormal protection	Output short-circuit protection Overload Protection Open-circuit Protection
<b>Max. output power/current/voltage range</b>	
HED6045/BT	3.5-19W/ 350mA /10-54VDC 5-27W/ 500mA /10-54VDC 6-32W/ 600mA /10-54VDC 7-38W/ 700mA /10-54VDC 8-42W/ 800mA /10-52VDC 9-45W/ 900mA /10-50VDC 9.5-45W/ 950mA /10-47VDC 10-45W/ 1000mA /10-45VDC 10.5-44W/ 1050mA /10-42VDC

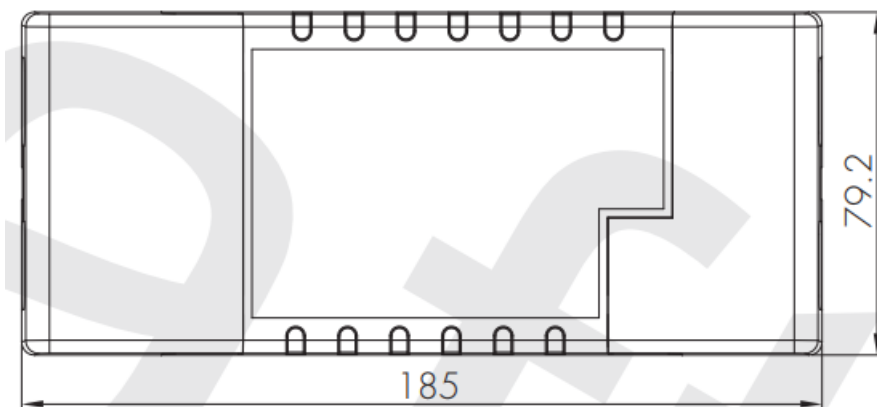
## Mechanical Structure & Dimensions



Built-in installation

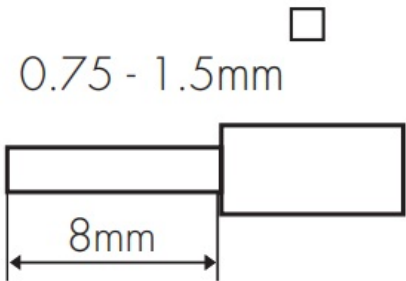


#### Stand-alone installation



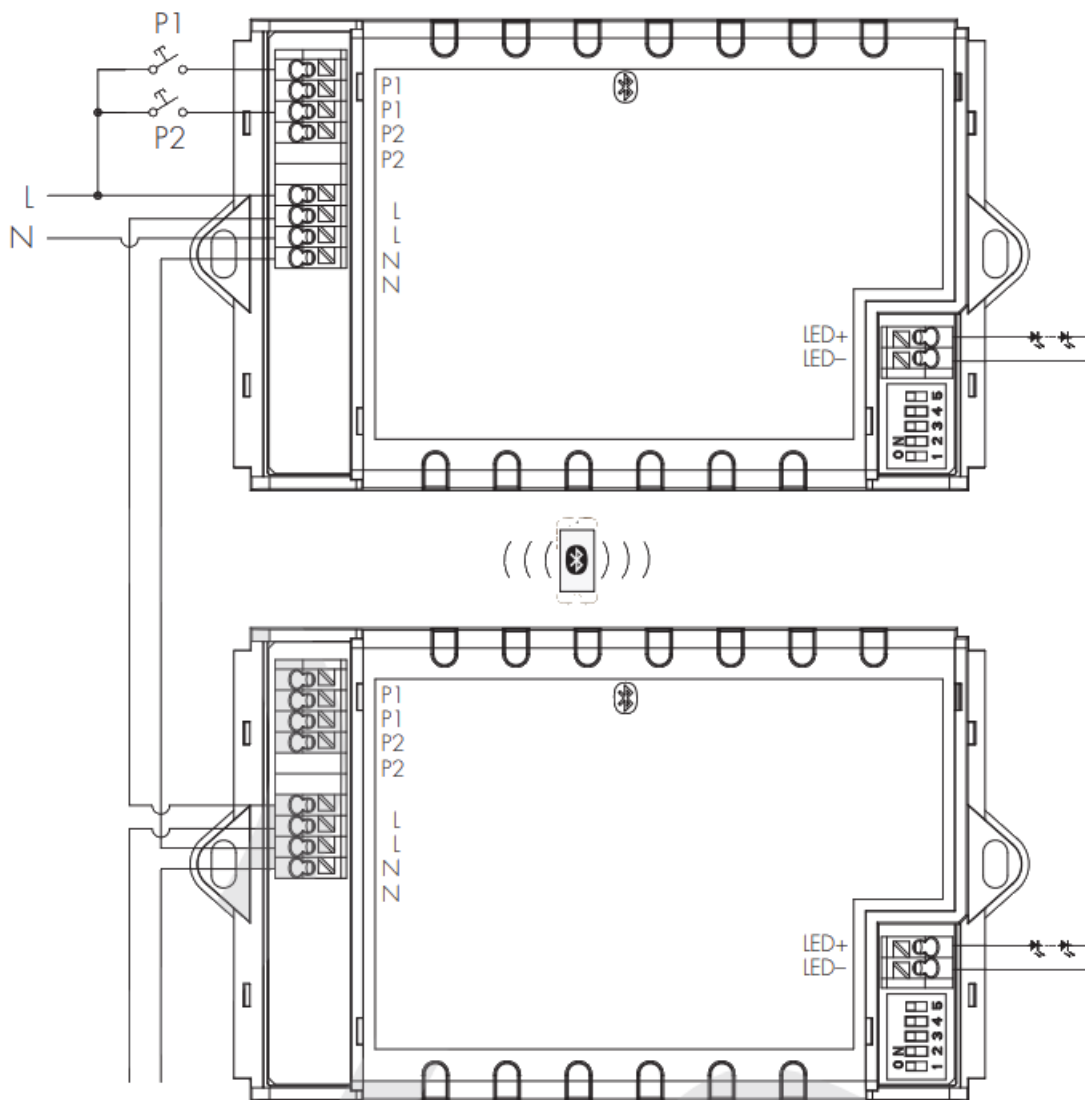
#### Wire Preparation





To make or release the wire from the terminal, use a screwdriver to push down the button.

## Wiring Diagram



Note: There is no need for any hardwirings on “push” terminal between one driver to another. The installer only needs to connect the push switches to the nearest driver to save labor and cost. The push switches can be assigned to control any Bluetooth driver through the app commissioning.

## Loading and In-rush Current

Model	HED6045/BT
In-rush Current (Imax.)	17.8A
Pulse Time	72 us

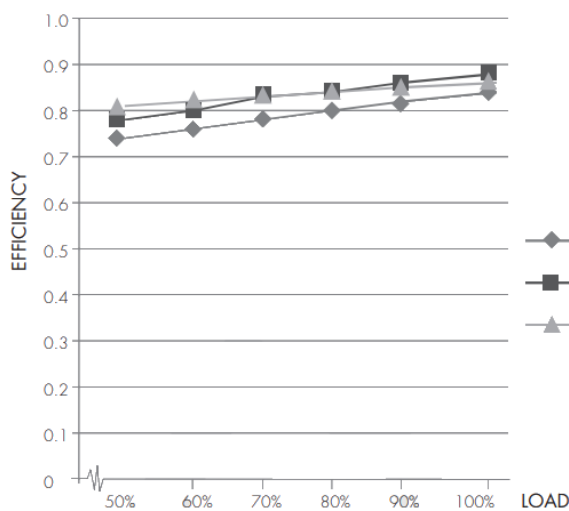
### Circuit Breaker Information

Automatic circuit breaker type	B16A	B10A	B13A	B20A	B25A
HED6045/BT	43	27	35	54	67

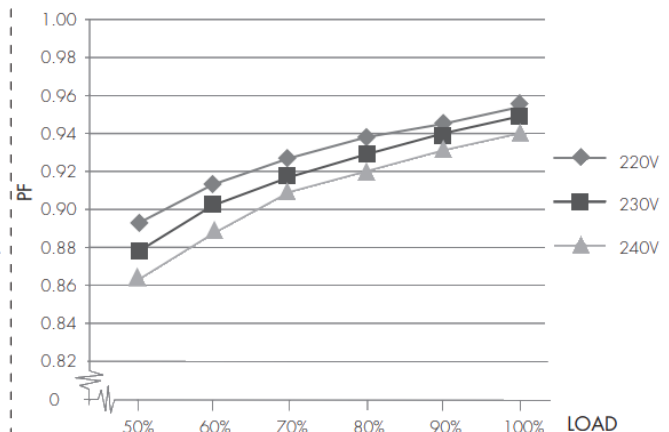
The data above is calculated according to the formula: Maximum Amount =  $16/(P_n/230)$ . In order to provide a more reliable reference in real application, the data have been revised to take 60% of the number calculated, i.e.  $16/(P_n/230) \times 60\%$ .

Please kindly take note that the calculation is based on ABB circuit breaker series S200. Actual values may differ due to different types of circuit breaker used and installation environment.

### Performance Characteristics

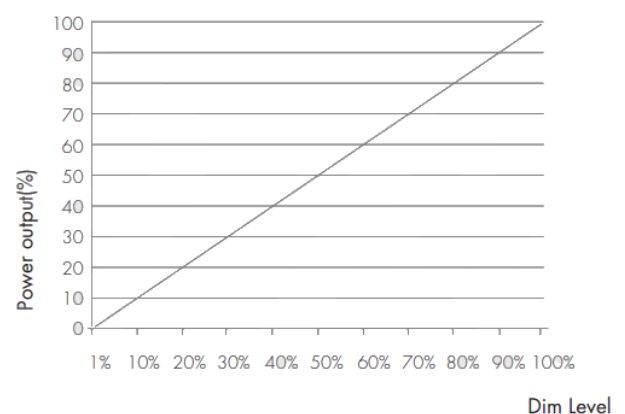
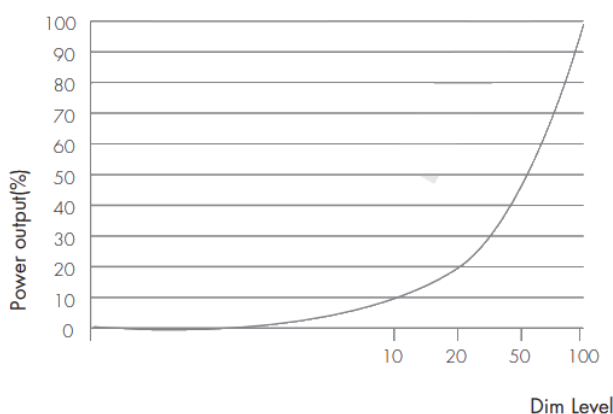


\* Typical Efficiency vs Load



\* Typical Power Factor vs Load

### Dimming Characteristics



### Dimming Interface Operation Notes

## Switch-Dim

The provided Switch-Dim interface allows for a simple dimming method using commercially available non-latching (momentary) wall switches. Up to 64 LED drivers maybe connected to one switch. Detailed Push switch configurations can be set on Koolmesh app.


Switch Function	Action	Descriptions
Push switch	Short press (<1 second) * Short press has to be longer than 0.1s, or it will be invalid.	– Turn on/off – Recall a scene – Turn on only – Exit manual mode – Turn off only – Do nothing
	Double push	– Turn on only – Exit manual mode – Turn off only – Do nothing – Recall a scene
	Long press (1 second)	– Dimming – Colour tuning – Do nothing
Simulate sensor	/	– Upgrade a normal on/off motion sensor to a Bluetooth controlled motion sensor

## Additional Information/Documents

1. Regarding precautions for LED driver installation and operation, please kindly refer to [www.hytronik.com/download](http://www.hytronik.com/download) ->knowledge ->LED Drivers – Precautions for Product Installation and Operation
2. To learn more about detailed product features/functions, please refer to [www.hytronik.com/download-knowledge](http://www.hytronik.com/download-knowledge) ->Introduction of App Scenes and Product Functions
3. Regarding precautions for Bluetooth product installation and operation, please kindly refer to [www.hytronik.com/download](http://www.hytronik.com/download) ->knowledge ->Bluetooth Products – Precautions for Product Installation and Operation
4. Data sheet is subject to change without notice. Please always refer to the most recent release on [www.hytronik.com/products/bluetooth](http://www.hytronik.com/products/bluetooth) technology ->Bluetooth Drivers
5. Regarding Hytronik standard guarantee policy, please refer to [www.hytronik.com/download](http://www.hytronik.com/download) ->knowledge ->Hytronik Standard Guarantee Policy

Subject to change without notice.

## Documents / Resources

	<a href="#">HYTRONIK HED6045/BT Bluetooth Dimmable LED Drivers with Bluetooth 5.0 SIG Mesh</a> [pdf] Owner's Manual HED6045-BT, HED6045 BT, LED Drivers with Bluetooth 5.0 SIG Mesh, HED6045 BT LED Drivers with Bluetooth 5.0 SIG Mesh, HED6045 BT LED Drivers, LED Drivers, Drivers, HED6045 BT Bluetooth Dimmable LED Drivers with Bluetooth 5.0 SIG Mesh, HED6045 BT Bluetooth Dimmable LED Drivers, Bluetooth Dimmable LED Drivers, Dimmable LED Drivers
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## References

- [!\[\]\(effbd7993c63c039a58fd3395789cf3f\_img.jpg\) Catalogue\\_Hytronik](#)
- [!\[\]\(144980d038f2541d7b588a8a9132bd70\_img.jpg\) iot.koolmesh.com](#)

Manuals+.