

Product Description

This series of LED drivers are Bluetooth dimmable LED drivers, with maximum power output ranging from 9W to 40W. They all come with Switch-Dim interface by using Push switch (retractable 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.

HED1009/BT



HED6010/BT


























HED1025/BT
















HED1040/BT



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 configuration
-  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 EWSSB/EWSSDB
-  Continuous development in progress...

Hardware Features

-  Switch-Dim
-  PWM 1KHz (1-100%) (Except for HED6010/BT)
-  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



Smartphone app for both iOS & Android platform



Koolmesh Pro app for iPad



Web app/platform: www.iot.koolmesh.com



EnOcean
Self-powered IoT

Fully support
EnOcean switch
EWSSB/EWSDB

Output Configuration

HED1009/BT, 9W

| | |
|-------|---------|
| 600mA | ●●●● |
| 500mA | ●●●○ |
| 400mA | ●●○● |
| 350mA | ●●○○ |
| 300mA | ●○●○ |
| 250mA | ●○○○ |
| 200mA | ○●○○ |
| | 1 2 3 4 |

HED6010/BT, 12.5W

| | |
|-------|---------|
| 500mA | ●●●○ |
| 400mA | ●●○○ |
| 350mA | ●●○○ |
| 300mA | ○●○○ |
| 250mA | ●○○○ |
| 230mA | ○●○○ |
| 195mA | ○●○○ |
| | 1 2 3 4 |

HED1025/BT, 25W

| | |
|-------|---------|
| 700mA | ●●●● |
| 650mA | ●●●○ |
| 600mA | ●●●○ |
| 550mA | ●●●○ |
| 500mA | ○●●○ |
| 450mA | ●●○○ |
| 400mA | ○●○○ |
| 350mA | ●○○○ |
| 300mA | ○●○○ |
| | 1 2 3 4 |

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

Technical Specifications

Bluetooth Transceiver

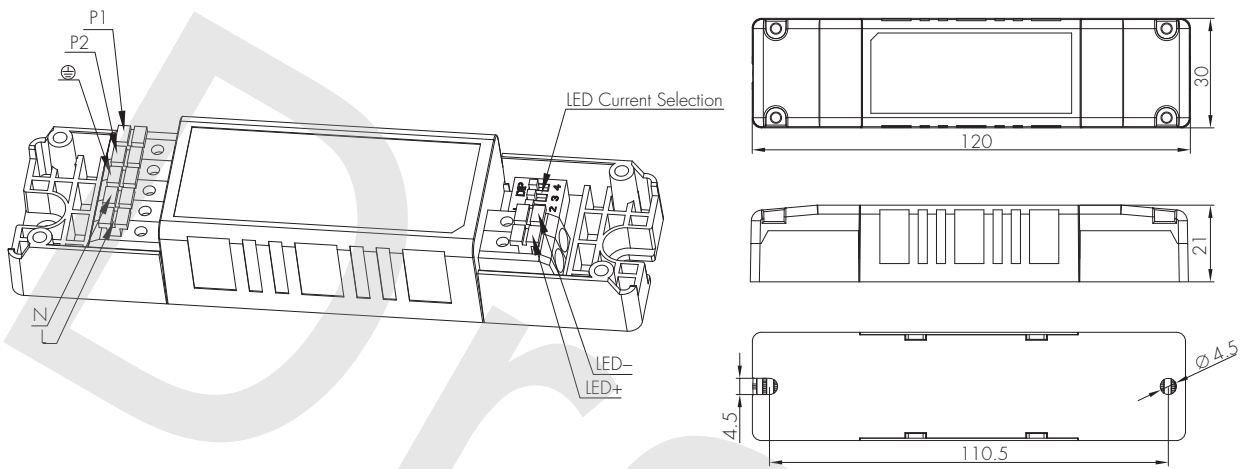
| | |
|------------------------|-------------------------|
| Operation frequency | 2.4 GHz - 2.483 GHz |
| Transmission power | 4 dBm |
| Range (Typical indoor) | 10~30m |
| Protocol | Bluetooth® 5.0 SIG Mesh |

| | Model No. | HED1009/BT | HED6010/BT | HED1025/BT | HED1040/BT |
|----------------|---------------------|---|--------------|--------------|--------------|
| Input | Mains Voltage | 220~240VAC 50/60Hz | | | |
| | Mains Current | 0.065~0.06A | 0.071~0.065A | 0.140~0.125A | 0.210~0.200A |
| | Power Factor | 0.9 | | | |
| | Max. Efficiency | 80% | 82% | 85% | 85% |
| Output | Ripple Current | <3% | <3% | <3% | <3% |
| | Uout Max. | 45V | 52V | 60V | 65V |
| | Turn-on Time | <0.5s | <0.5s | <0.5s | <0.5s |
| | Dimming Interface | Switch-Dim | | | |
| Environment | Operation Temp. | -20 ~ +50°C | -20 ~ +50°C | -20 ~ +50°C | -20 ~ +50°C |
| | Case Temp. (Max.) | 85°C | 75°C | 85°C | 85°C |
| | IP Rating | IP20 | IP20 | IP20 | IP20 |
| Safety and EMC | EMC Standard | EN55015, EN61547, EN61000-3-2/-3-3, EN300328, EN301489-1/-17, EN62479 | | | |
| | 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 | | | |

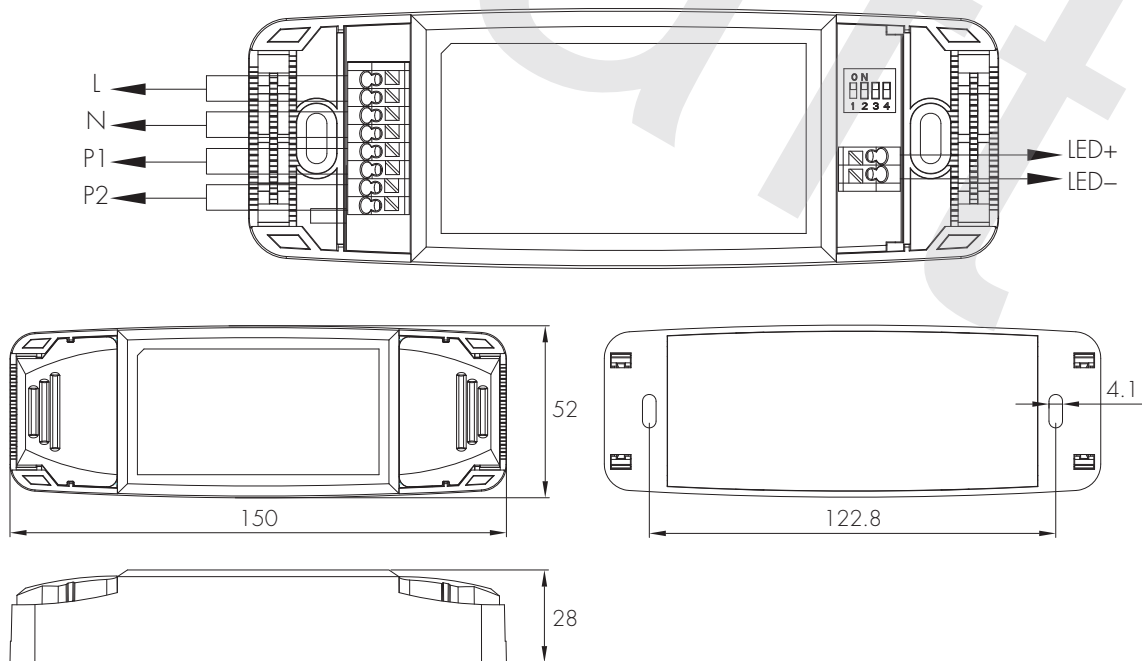
| Model No. | Max. output power/current/voltage range | | | |
|------------|--|---|--|--|
| HED1009/BT | 2-6W/ 200mA /6-28V | 2-9W/ 400mA /6-22V | 2-9W/ 600mA /6-15V | |
| HED6010/BT | 1.5-8W/ 195mA /6-41V 2.5- 12.8W/ 350mA /6-36V | 1.5-9W/ 230mA /6-41V 2.5-12.8W/ 400mA /6-32V | 1.5-10W/ 250mA /6-41V 3-12.5W/ 500mA /6-25V | 2-12W/ 300mA /6-41V |
| HED1025/BT | 2-15W/300mA /6-48V 3-24W/500mA /6-46V 4-25W/700mA /6-36V | 2-17W/350mA /6-48V 3-24W/550mA /6-44V | 2-20W/400mA /6-48V 4-25W/600mA /6-42V | 3-22W/450mA /6-48V 4-25W/650mA /6-38V |

Mechanical Structure & Dimensions

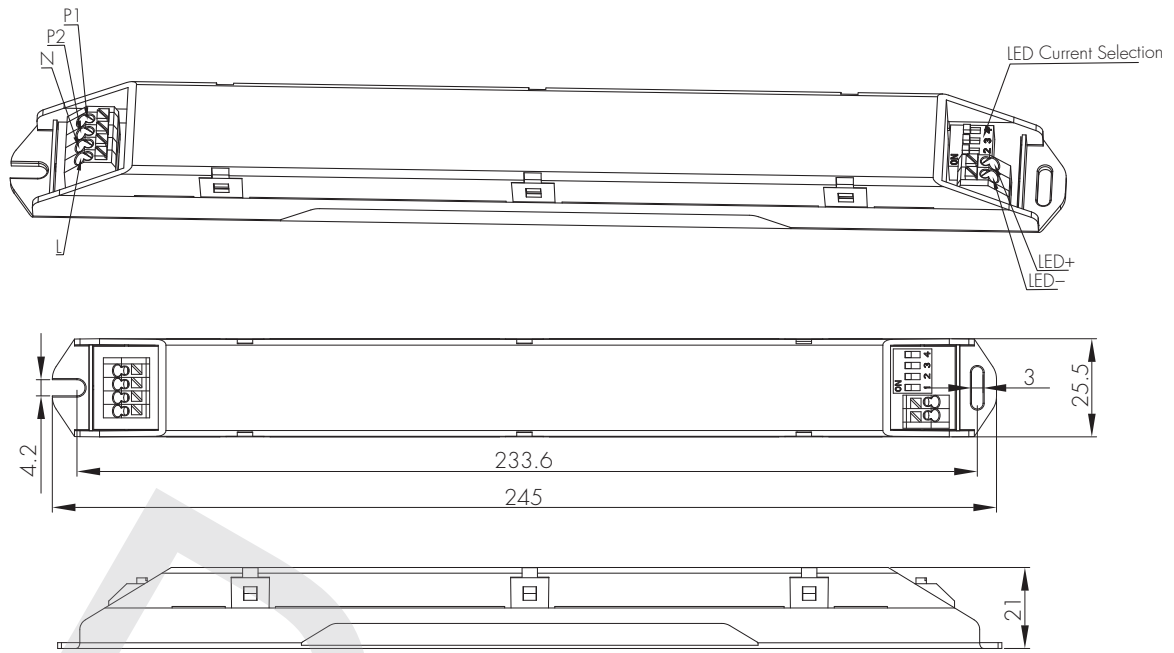
HED1009/BT, 1x9W



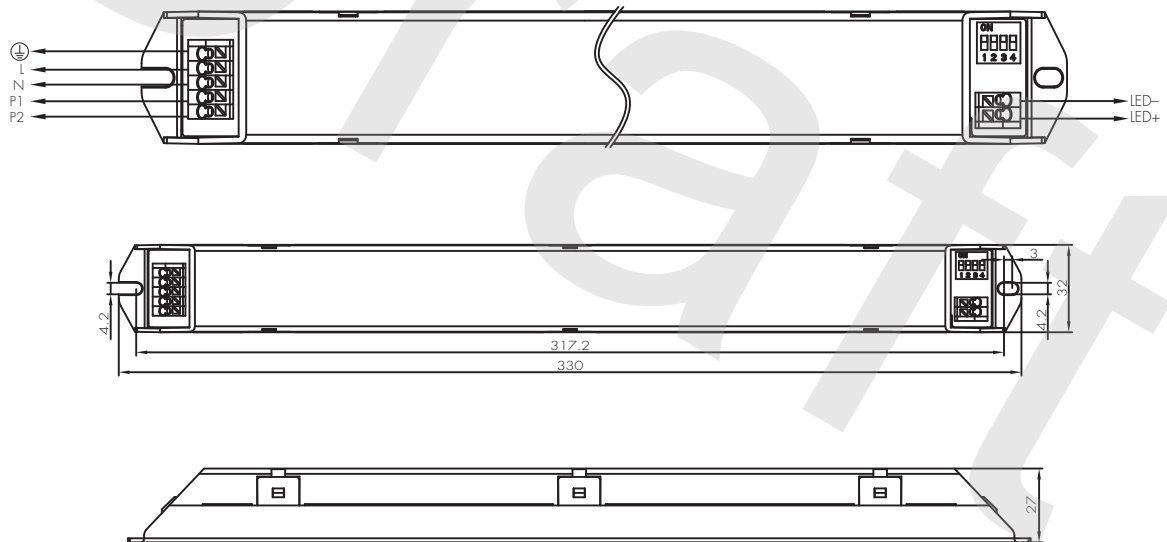
HED6010/BT, 1x10W



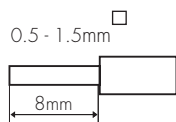
HED1025/BT, 1x30W



HED1040/BT, 1x40W



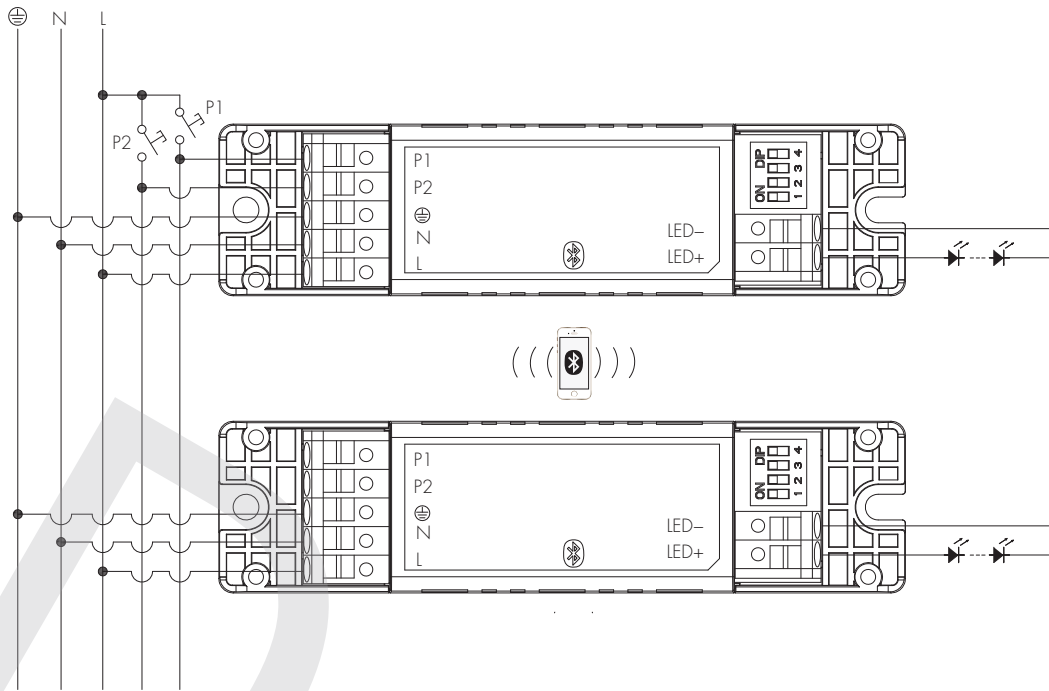
Wire Preparation



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

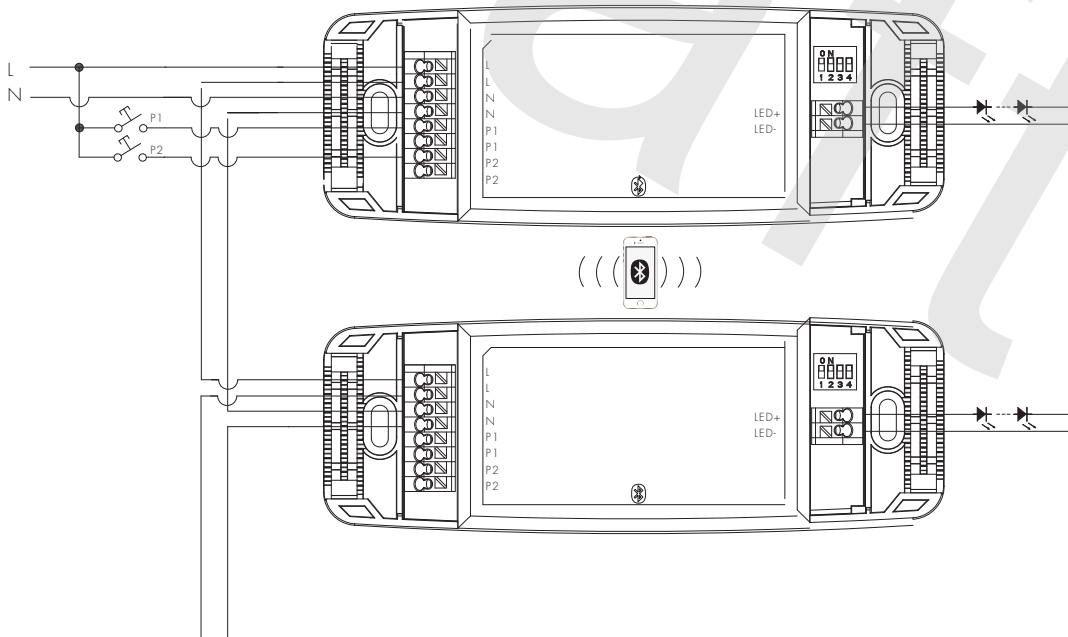
Wiring Diagram

Model: HED1009/BT



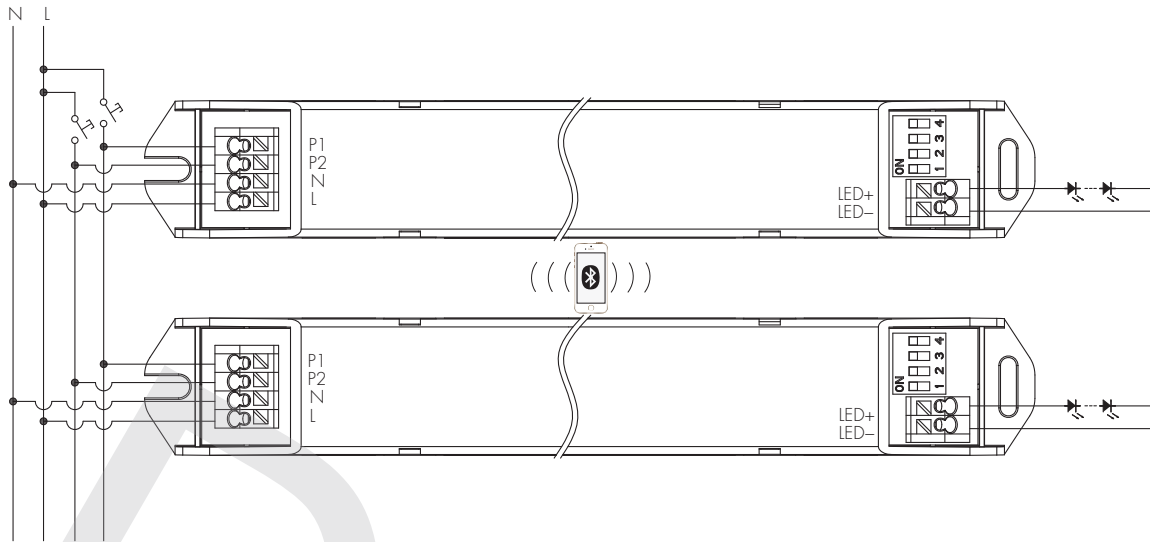
Note: There is no need for any hardwirings on "push" terminal between one driver to another. The installer only needs to connect the push switches to the nearest driver to save labor and cost. The push switches can be assigned to control any Bluetooth driver through the app commissioning.

Model: HED6010/BT



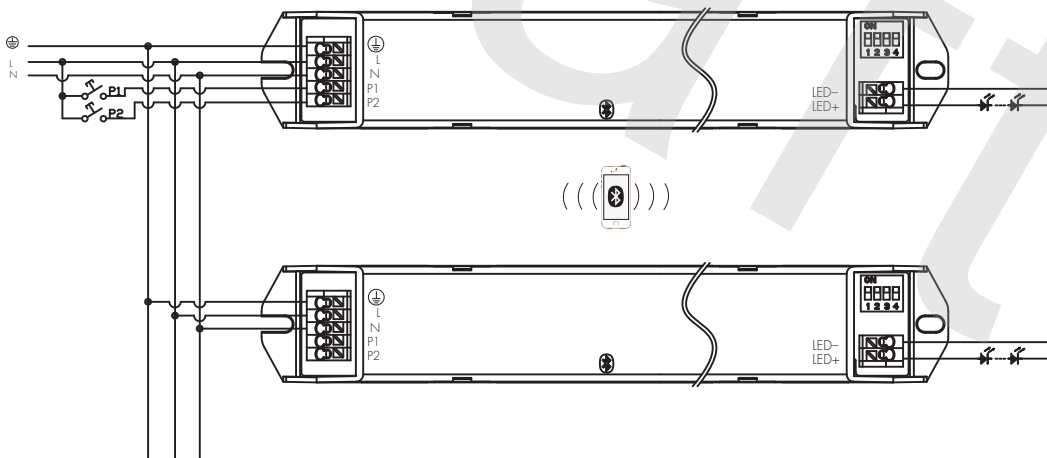
Note: There is no need for any hardwirings on "push" terminal between one driver to another. The installer only needs to connect the push switches to the nearest driver to save labor and cost. The push switches can be assigned to control any Bluetooth driver through the app commissioning.

Model: HED1025/BT



Note: There is no need for any hardwiring 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.

Model: HED1040/BT



Note: CH1 & CH2 are working independently, meaning that they cannot be used with luminaires that share "+".

There is no need for any hardwiring 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 | HEC6010/BT | HEC1025/BT | HED1040/BT |
|--------------------------------------|------------|------------|------------|
| In-rush Current (I _{max.}) | 23A | 22A | 25A |
| Pulse Time | 30 μs | 18 μs | 15 μs |

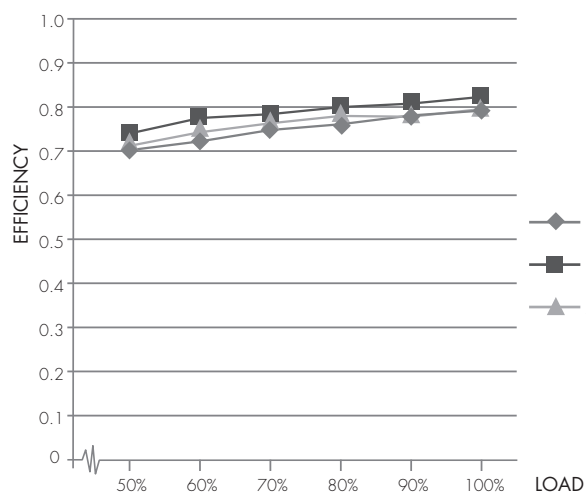
Circuit Breaker Information

| Automatic circuit breaker type | B16A | B10A | B13A | B20A | B25A |
|--------------------------------|------|------|------|------|------|
| HED1009/BT | 176 | 110 | 143 | 220 | 276 |
| HED6010/BT | 142 | 89 | 115 | 178 | 222 |
| HED1025/BT | 73 | 46 | 59 | 92 | 115 |
| HED1040/BT | 41 | 26 | 33 | 52 | 65 |

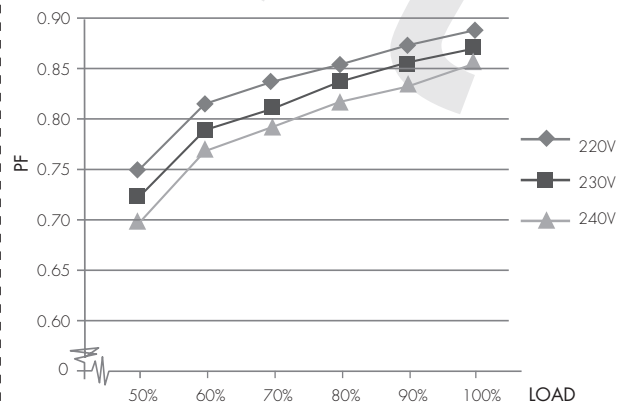
The data above is calculated according to the formula: Maximum Amount = $16/(P_n/230)$. In order to provide a more reliable reference in real application, the data have been revised to take 60% of the number calculated, i.e. $16/(P_n/230) \times 60\%$. Please kindly take note that the calculation is based on ABB circuit breaker series S200. Actual values may differ due to different types of circuit breaker used and installation environment.

Performance Characteristics

HED1009/BT

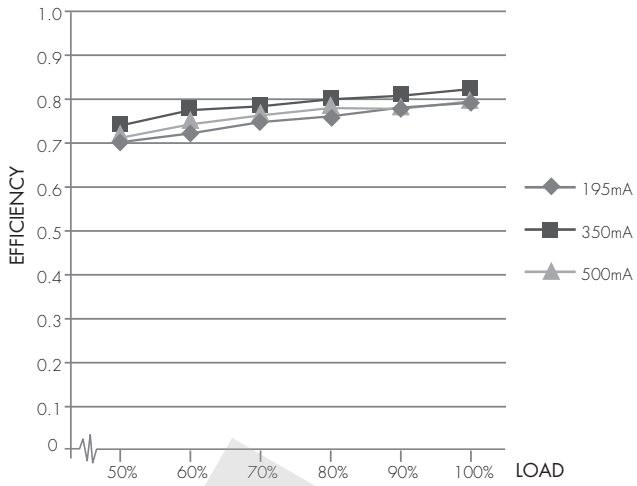


* Typical Efficiency vs Load

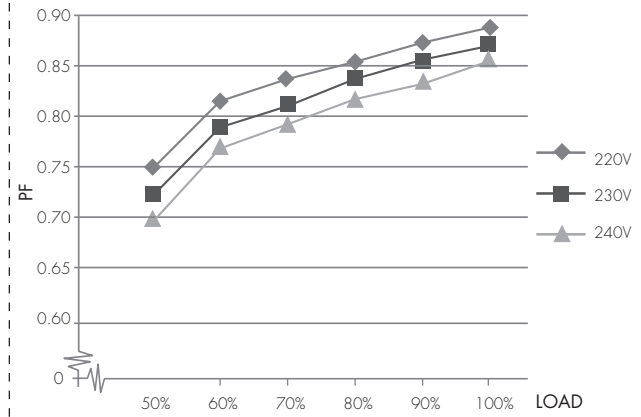


* Typical Power Factor vs Load

HED6010/BT

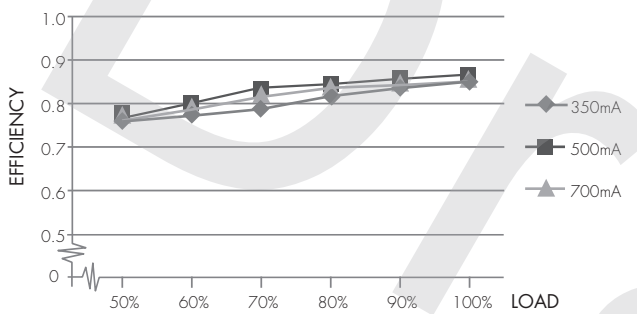


* Typical Efficiency vs Load

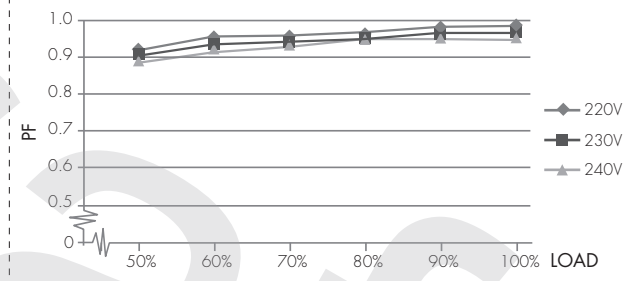


* Typical Power Factor vs Load

HED1025/BT

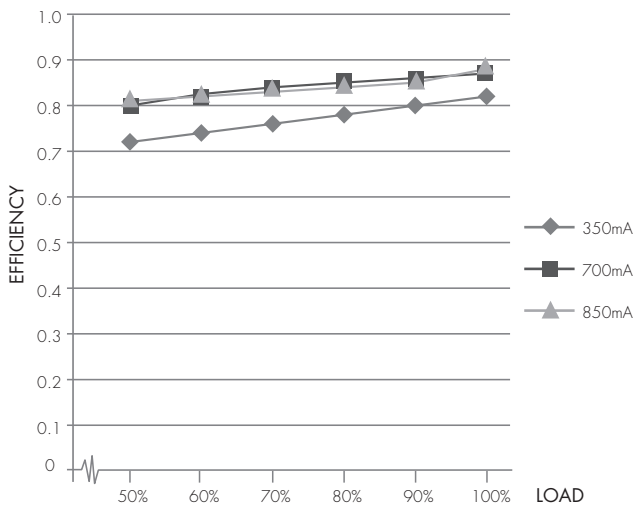


* Typical Efficiency vs Load

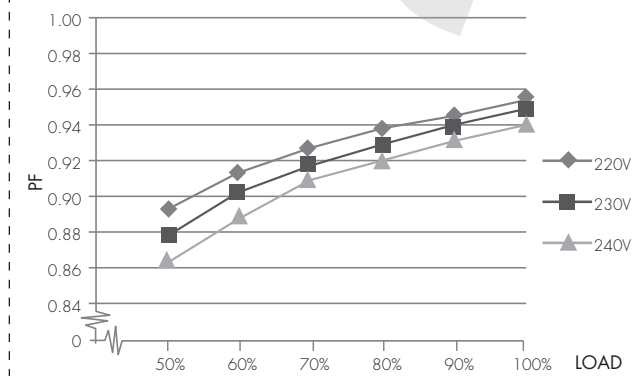


* Typical Power Factor vs Load

HED1040/BT

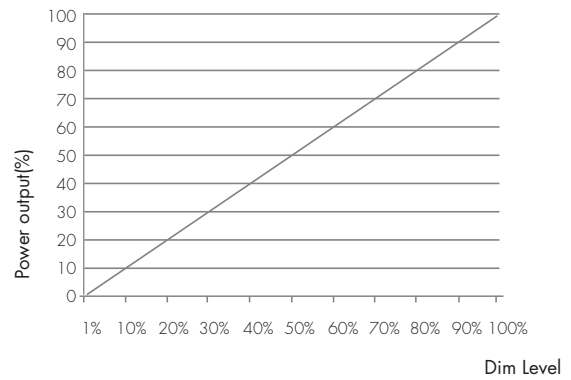
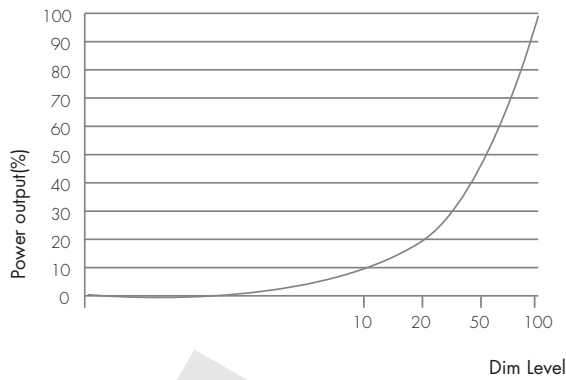


* Typical Efficiency vs Load

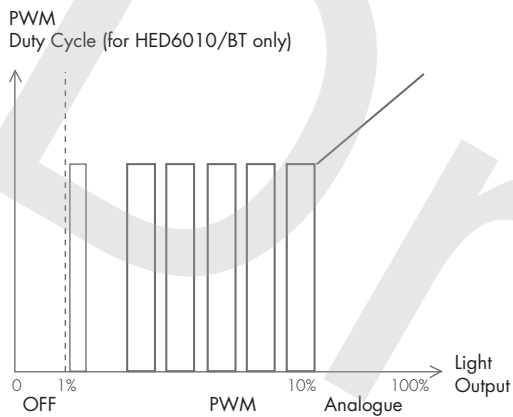


* Typical Power Factor vs Load

Dimming Characteristics



Dimming Profile



| Dimming range | Dimming technique |
|---------------|-------------------|
| 0-1% | OFF |
| 1-10% | PWM |
| 10-100% | Analogue |

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 - Turn on only - Turn off only - Recall a scene - Exit manual mode - Do nothing |
| | Double push | - Turn on only - Turn off only - Recall a scene - Exit manual mode - Do nothing |
| | Long press (≥1 second) | - Dimming - 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 ->knowledge ->LED Drivers - Precautions for Product Installation and Operation](http://www.hytronik.com/download->knowledge->LED%20Drivers%20-%20Precautions%20for%20Product%20Installation%20and%20Operation)
2. To learn more about detailed product features/functions, please refer to [www.hytronik.com/download->knowledge ->Introduction of App Scenes and Product Functions](http://www.hytronik.com/download->knowledge->Introduction%20of%20App%20Scenes%20and%20Product%20Functions)
3. Regarding precautions for Bluetooth product installation and operation, please kindly refer to [www.hytronik.com/download ->knowledge ->Bluetooth Products - Precautions for Product Installation and Operation](http://www.hytronik.com/download->knowledge->Bluetooth%20Products%20-%20Precautions%20for%20Product%20Installation%20and%20Operation)
4. Data sheet is subject to change without notice. Please always refer to the most recent release on [www.hytronik.com/products/bluetooth technology ->Bluetooth Drivers](http://www.hytronik.com/products/bluetooth%20technology->Bluetooth%20Drivers)
5. Regarding Hytronik standard guarantee policy, please refer to [www.hytronik.com/download ->knowledge ->Hytronik Standard Guarantee Policy](http://www.hytronik.com/download->knowledge->Hytronik%20Standard%20Guarantee%20Policy)

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