LED Drivers With Bluetooth® 5.0 SIG Mesh

HED6040/BT ECO HED6060/BT ECO

Constant Current

HYTRONIK®

Product Description

This series is a Bluetooth dimming LED driver with 40W to 60W max power output. It has a Switch-Dim interface via a Push switch. It is ideal for direct projects or new luminaire designs 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.

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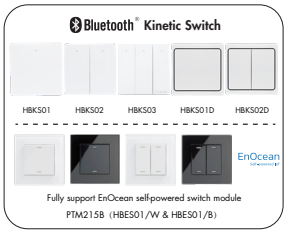
App Features

- Quick setup mode & advanced setup mode
- Web app/platform for project deployment & data analysis
- Koolmesh Pro app on iPad for on-site configuration
- Floorplan feature to simplify project planning
- One-key device replacement
- Device social relations check
- Staircase function (primary & secondary)
- Remote control via gateway support HBGW01
- Heat map
- Grouping luminaires via mesh network
- Scenes
- Push switch configuration
- 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…

Hardware Features

- Switch-Dim with two Push inputs
- Flicker free (1-100%)
- Standby power <0.5W
- Active PFC design
- Logarithmic Dimming
- Linear Dimming
- Configurable constant current (CC) output via DIP switch
- Short-circuit Protection
- Overload Protection
- Open-circuit Protection
- 5-year warranty



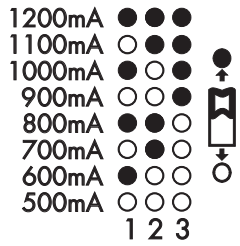
Technical Specifications

	Model No.	HED6040/BT ECO	HED6060/BT ECO
Input	Input Voltage	220~240VAC 50/60Hz	220~240VAC 50/60Hz
	Input Current	210~190mA	310~280mA
	Power Factor	0.95	0.95
	Input Power	45W	68W
	Max. Efficiency	88%	88%
Output	Ripple Current	<3%	<3%
	Uout Max.	60V	60V
	Turn-on Time	<0.5s	<0.5s
	Stand-by Power	<0.5W	<0.5W
	Dimming Interface	Switch-Dim	Switch-Dim
Environment	Operation Temp.	-20 ~ +50℃	-20 ~ +50℃
	Case Temp. (Max.)	80℃	80℃
	Operating Humidity	10~90%	10~90%
	Storage Temperature	-40~+70℃	-40~+70℃
	IP Rating	IP20	IP20
	Protection Class	Class I	Class I
Safety and EMC	EMC Standard	EN55015 EN61547 EN61000-3-2/-3-3	
	Safety Standard	EN61347-1 EN61347-2-13	
	RED	EN300 328 EN301489-1/-17 EN50663	
	Dielectric strength	Input→output: 3000VAC / 5mA / 1min	
	Abnormal protection	Output short-circuit protection, Open-circuit protection, Overload protection	

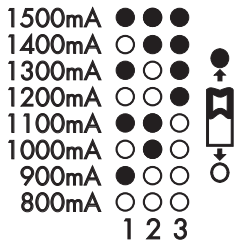
Model No.	Max. output power/current/voltage range	
HED6040/BT ECO	10-23W/ 500mA /20-46V	12-28W/ 600mA /20-46V
	14-32W/ 700mA /20-46V	16-37W/ 800mA /20-46V
	18-40W/ 900mA /20-44V	20-40W/1000mA/20-40V
	22-40W/ 1100mA /20-36V	24-40W/ 1200mA /20-33V
HED6060/BT ECO	16-37W/800mA /20-46V	18-42W/ 900mA /20-46V
	20-46W/ 1000mA /20-46V	22-51W/ 1100mA /20-46V
	24-55W/ 1200mA /20-46V	26-60W/1300mA /20-46V
	28-60W/ 1400mA /20-43V	30-60W/ 1500mA /20-40V

Output Configuration

HED6040/BT ECO,1x40W

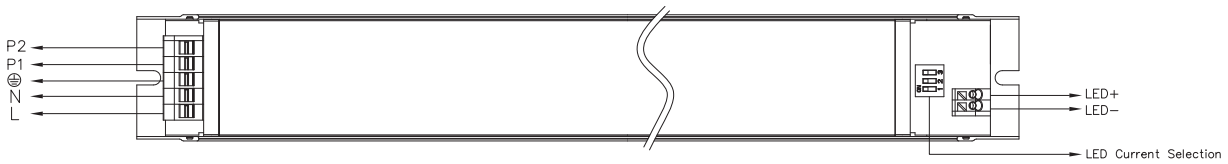


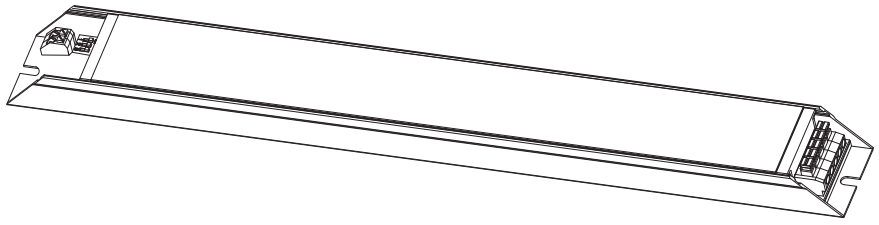
HED6060/BT ECO,1x60W

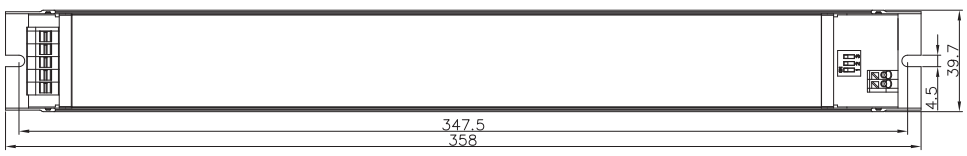


⚠ Warning: Please make sure the correct current is selected before starting the driver!

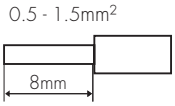
Mechanical Structure & Dimensions





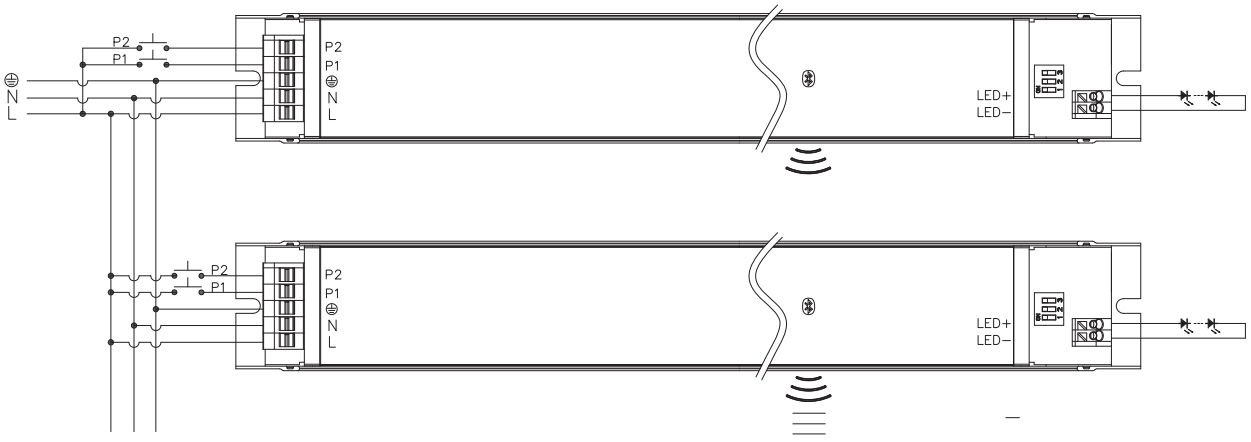


Wire Preparation



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

Wiring Diagram



Loading and In-rush Current

Model	HED6040/BT ECO	HED6060/BT ECO
In-rush Current (Imax.)	25.3A	25.3A
Pulse Time	56μs	56μs

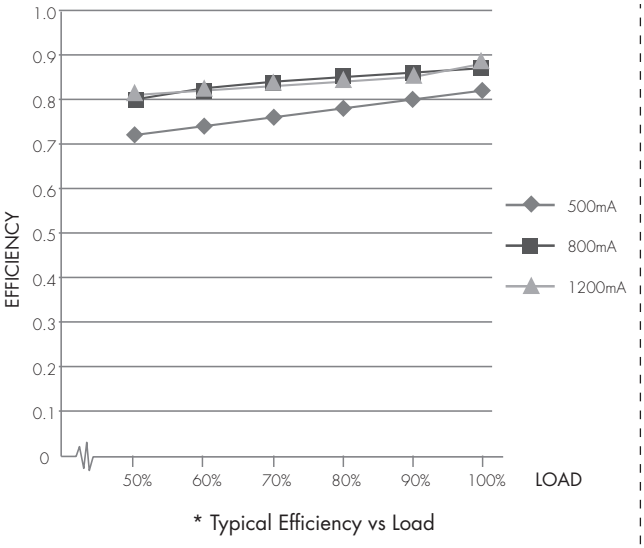
Circuit Breaker Information

Automatic circuit breaker type	B16A	B10A	B13A	B20A	B25A
HED6040/BT ECO	46	29	38	58	73
HED6060/BT ECO	31	19	25	38	48

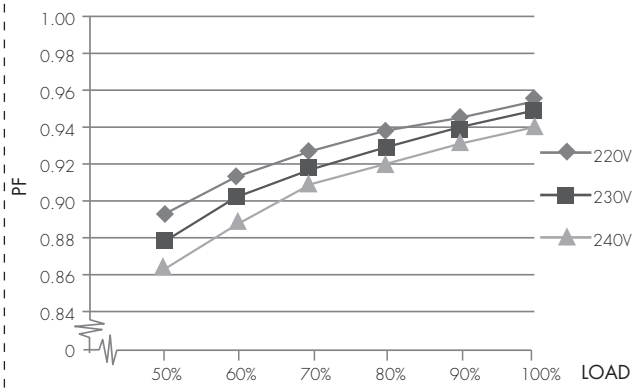
The data above is calculated according to the formula: Maximum Amount = 16/(Pn/230). In order to provide a more reliable reference in real application, the data have been revised to take 60% of the number calculated, i.e. 16/(Pn/230) x 60%. Please kindly take note that the calculation is based on ABB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

Performance Characteristics

HED6040/BT ECO

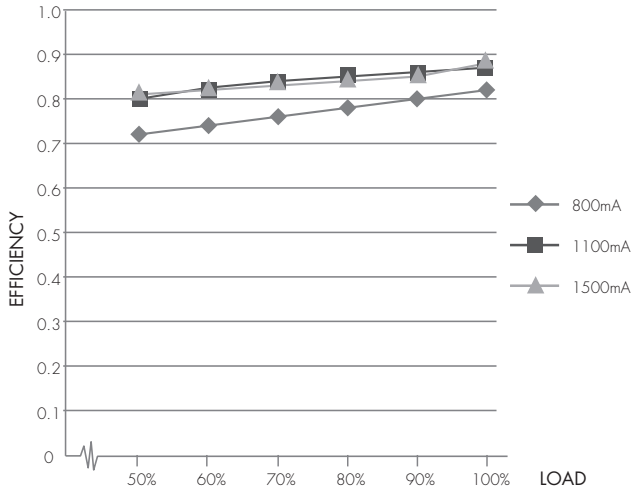


* Typical Efficiency vs Load

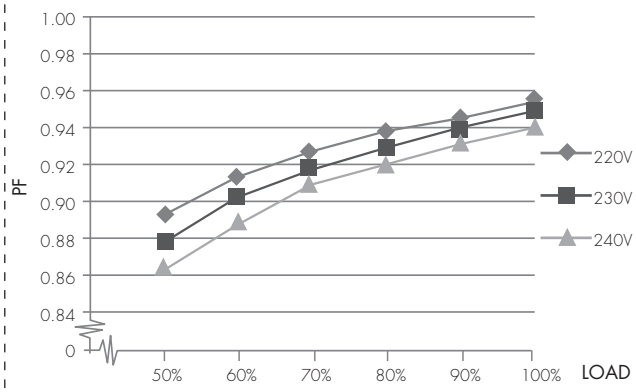


* Typical Power Factor vs Load

HED6060/BT ECO

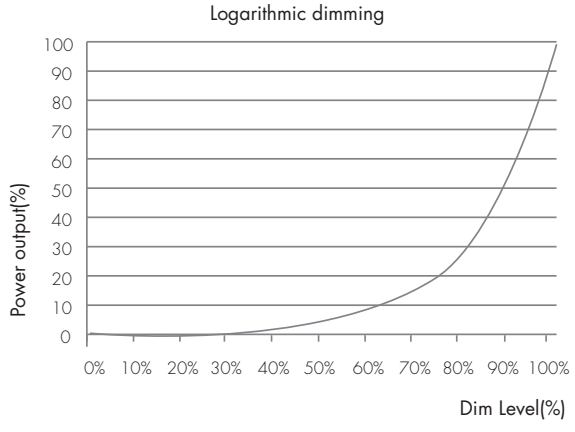


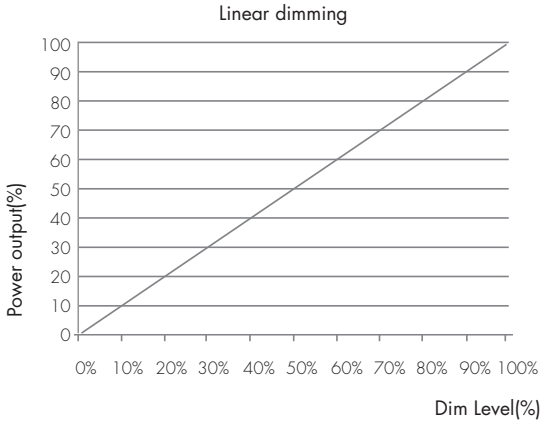
* Typical Efficiency vs Load



* 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 - Turn on only - Turn off only - Recall a scene - Quit manual mode - Do nothing
	Double push	- Turn on only - Turn off only - Recall a scene - Quit manual mode - Do nothing
	Long press (≥1 second)	- Dimming - Colour tuning - Do nothing
Sensor-link	/	- Upgrade a normal on/off motion sensor to a Bluetooth controlled motion sensor
Emergency Self-Test Function	Short press (<1 second) * Short press has to be longer than 0.1s, or it will be invalid.	- Start Self test (Monthly) - Stop Self test - Start Self test (Annually) - Invalid
	Long press (≥1 second)	- Start Self test (Monthly) - Stop Self test - Start Self test (Annually) - Invalid
Fire Alarm (VFC signal only)	Refer to http://fag.koolmesh.com/docu/en/	- Able to connect the Fire Alarm system - Once the fire alarm system is triggered, all the luminaries controlled by the Push Switch will enter the preset scene (normally it's full on), after the fire alarm system gives the ending signal, all the luminaries controlled by this Push Switch will revert back to normal status.

Additional Information / Documents

1. To learn more about detailed product features/functions, please kindly refer to https://hytronik.com/product/hed6040-bt eco

2. Regarding precautions for Bluetooth product installation and operation, please kindly refer to https://hytronik.com/service/downloads (Bluetooth Products Precautions for Product linstallation and Operation)

3. Regarding precautions for LED Drivers installation and operation, please kindly refer to https://hytronik.com/service/downloads (LED Drivers Precautions for Product Installation and Operation)

4. Data sheet is subject to change without notice. Please always refer to the most recent release on https://hytronik.com/products/led-drivers

5. Regarding Hytronik standard guarantee policy, please kindly refer to https://hytronik.com/service/downloads (Guarantee Conditions document)