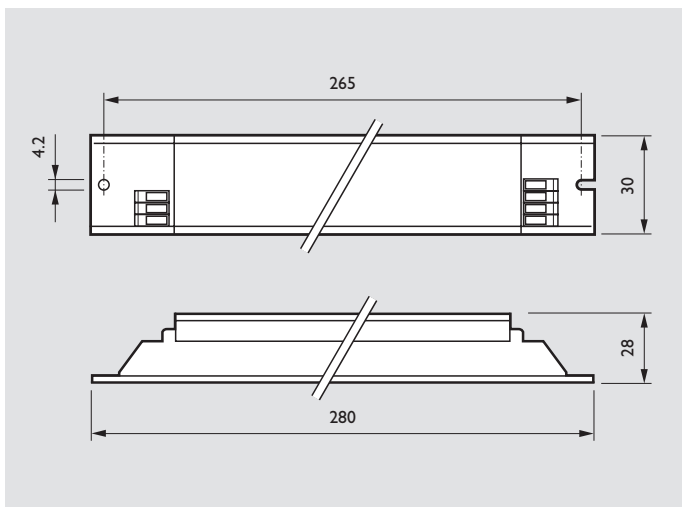
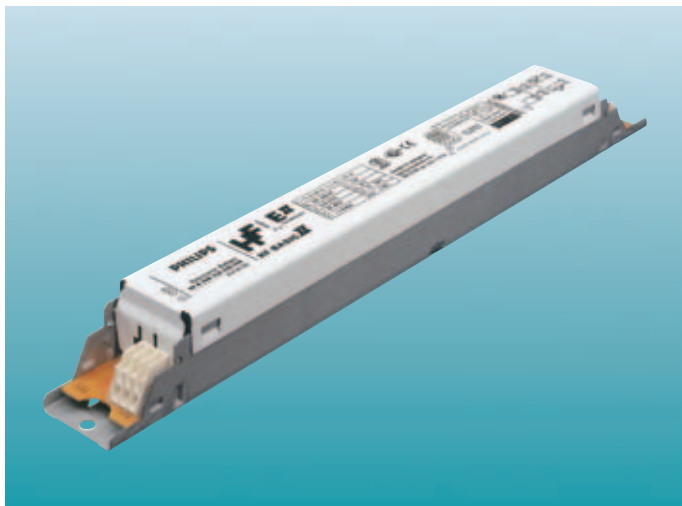


# HF-BASIC II

## Electronic ballasts for TL-D and PL-L lamps

### Lamp control gear



HF-B 136, 236, 158, 258 TL-D/PL-L EII

### Definition

Compact, lightweight, high frequency electronic standard ballasts for TL-D and PL-L fluorescent lamps, for applications with low switching frequency.

### Description

- Flicker-free instant start, ideal for areas with low switching frequency (maximum 3 times a day)
- 50% longer lamp life than with conventional ballasts (switching maximum 3 times a day)
- Up to 25% reduction in energy consumption at equal luminous flux compared with conventional gear
- Smart power: constant light independent of mains voltage fluctuations
- Unit is protected against excessive mains voltages and incorrect connections
- Automatic stop circuit is activated within five seconds in case of lamp failure (safety stop); once the lamp has been replaced, the ballast resets automatically.
- Equipped with connectors suitable for automatic wiring machines.

### Applications

Typical areas of application include:


- Department stores, shops, supermarkets with long lamp burning hours
- Industrial premises with long lamp burning hours
- Airports, railway stations
- Offices with low switching frequency
- Corridors with low switching frequency
- Outdoor lighting; in general suitable for class I applications
- Suitable for installations with emergency back-up, according to VDE 0108 with re-ignition <0.5 s.

### Philips quality

This assures optimum quality regarding:

- System supplier  
As manufacturers of lamps and electronic control gear, Philips ensures that, from the earliest development stage, optimum lamp/ballast performance is maintained
- European standards  
Philips electronic ballast comply with all relevant international rules and regulations.

### Compliances and approvals

- RFI < 30 MHz EN 55015
- RFI > 30 MHz EN 55022 A
- Harmonics EN 61000-3-2
- Immunity EN 61547
- Safety EN 61347-2-3
- Performance EN 60929
- Vibration & bump tests  
IEC 68-2-6 Fc  
IEC 68-2-29 Eb
- Quality standard ISO 9000-2000
- Environmental standard  
ISO 14001
- Approval marks  
ENEC-VDE-EMV
- CE marking
- Temperature declared thermally protected IEC 61347-1 

# PHILIPS

**Technical data: (all typical values at Vmains = 230V)**

| Lamp      | Qty. of lamps | Ballast          | System Power W | Lamp Power W | Ballast Losses W | NOMINAL Lamp Lumen Lm | EEI |
|-----------|---------------|------------------|----------------|--------------|------------------|-----------------------|-----|
| TL-D 36 W | 1             | HF-B 136 TLD EII | 37             | 34.0         | 3.0              | 3350                  | A2  |
| TL-D 36 W | 2             | HF-B 236 TLD EII | 70             | 33.5         | 3.0              | 3350                  | A2  |
| TL-D 58 W | 1             | HF-B 158 TLD EII | 57             | 53.0         | 4.0              | 5200                  | A2  |
| TL-D 58 W | 2             | HF-B 258 TLD EII | 110            | 52.0         | 6.0              | 5200                  | A2  |
| PLL 36W   | 1             | HF-B 136 TLD EII | 35             | 32.0         | 3.0              | 2900                  | A2  |
| PLL 36W   | 2             | HF-B 236 TLD EII | 67             | 31.5         | 4.0              | 2900                  | A2  |
| PLL 55W   | 1             | HF-B 158 TLD EII | 57             | 52.0         | 4.5              | 4800                  | A2  |
| PLL 55W   | 2             | HF-B 258 TLD EII | 111            | 52.0         | 7.0              | 4800                  | A2  |

**Technical data for installation**

|                                  |                   |
|----------------------------------|-------------------|
| Mains operation                  |                   |
| Rated mains voltage              | 220 – 240V        |
| With tolerances for performance: | +6%-8             |
| With tolerances for safety       | +/- 10%           |
| Mains frequency                  | 50/60Hz           |
| Operation frequency (typical)    | > 42 kHz (45 kHz) |
| Power factor                     | > 0.96            |

|   |             |
|---|-------------|
| DC voltage operation during emergency back-up         |             |
| Yes for limited time (48 hrs) only:                   |             |
| Required battery voltage for guaranteed ignition      | 198 - 254 V |
| Required battery voltage for burning lamps            | 176 - 254 V |
| Nominal light output is obtained at the DC voltage of | 220 - 240 V |

**Notes:**

- For a continuous DC application, an external fuse should be used in the luminaire.
- Continuous low DC voltages (< 198 V) can influence the lifetime of the ballast

|   |  |
|---|--|
| Earth leakage current                                   | < 0,5 mA per ballast   |
| Ignition time   | < 0.5 s  |
| Constant light operation                                | In case of mains voltage fluctuations within 202 - 254 V, the luminous flux changes by a maximum of ± 2%       |
| Overvoltage protection                                  | 48 hrs at 320 V AC<br>2 hrs at 350 V AC  |
| Dual fixture; master-slave operation                    | Possible, in general a maximum of 2m of lamp wires between ballast and lamp is allowed                         |
| Cable capacity  | Max. 120 pF between lamp wires<br>max. 120 pF between lamp wires and earth<br>EMI precautions have to be taken |
| Automatic restart after lamp replacement or voltage dip | Yes: tested with a dip down to 30% with a duration of 10 mains cycles  |
| Insulation resistance test:                             | 500 V DC from both mains inputs to Earth (not between Line and Neutral)  |

Note: Ensure that the neutral is reconnected again after abovementioned test is carried out and before the installation is put into operation.

**Mains current at 230V**

| Ballast          | Lamp      | Input current A |
|------------------|-----------|-----------------|
| HF-B 136 TLD EII | TL-D 36 W | 0.16            |
| HF-B 236 TLD EII | TL-D 36 W | 0.32            |
| HF-B 158 TLD EII | TL-D 58 W | 0.24            |
| HF-B 258 TLD EII | TL-D 58 W | 0.48            |
| HF-B 136 TLD EII | PL-L 36W  | 0.15            |
| HF-B 236 TLD EII | PL-L 36W  | 0.29            |
| HF-B 158 TLD EII | PL-L 55W  | 0.24            |
| HF-B 258 TLD EII | PL-L 55W  | 0.48            |

**Inrush current**

| Ballast          | Inrush current value time at typical mains impedance | Max. quantity of ballast per Miniature Circuit Breaker |           |
|------------------|--|--|-----------|
|                  |  | Type B16 A   | Type C16A |
| HF-B 136 TLD EII | 18 A / 250 µs  | 28   | 48        |
| HF-B 158 TLD EII | 18 A / 250 µs  | 28   | 48        |
| HF-B 236 TLD EII | 18 A / 250 µs  | 28   | 48        |
| HF-B 258 TLD EII | 31 A / 350 µs  | 12   | 20        |

**Conversion table for max. quantities of ballasts on other types of Miniature Circuit Breaker**

| MCB type | Relative number of ballasts |
|----------|-----------------------------|
| B        | 16A                         |
| B        | 10A                         |
| C        | 10A                         |
| L, I     | 16A                         |
| L, I     | 10A                         |
| G, U, II | 16A                         |
| G, U, II | 10A                         |
| K, III   | 16A                         |
| K, III   | 10A                         |

|                        |
|------------------------|
| 100% (see table above) |
| 63%                    |
| 104%                   |
| 108%                   |
| 65%                    |
| 212%                   |
| 127%                   |
| 254%                   |
| 154%                   |

**Notes**

1. Data is based on a main supply with an impedance of 400 mΩ (equal to 15 m cable of 2,5 mm and another 20 m to the middle of the power distribution), under worst case conditions. With an impedance of 800 mΩ the number of ballasts can be increased by 10%.
2. Measurements will be verified in real installations; therefore data are subject to change.
3. In some cases the maximum number of ballasts is not determined by the MCB but by the maximum electrical load of the lighting installation.
4. Note that the maximum number of ballasts is given when these are all switched on at the same moment, i.e. by a wall switch.
5. Measurements were carried out on single-pole MCB's. For multi-pole MCB's it is advisable to reduce the number of ballasts by 20%.
6. The maximum number of ballasts which can be connected to one Residual Current Detector of 30mA is 30.

**Technical data for design and mounting HF ballasts in fixtures**

**Temperatures**

Temperature range to ignite lamp -15°C to +50°C  
with ignition aid

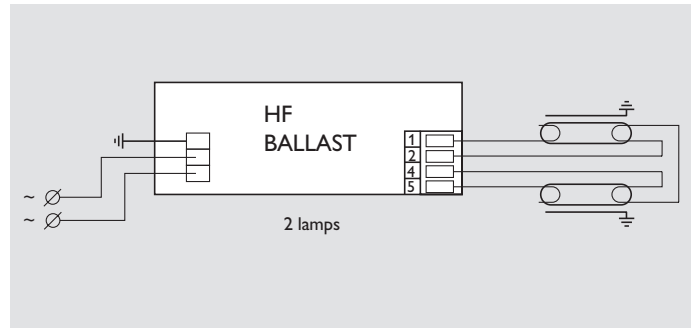
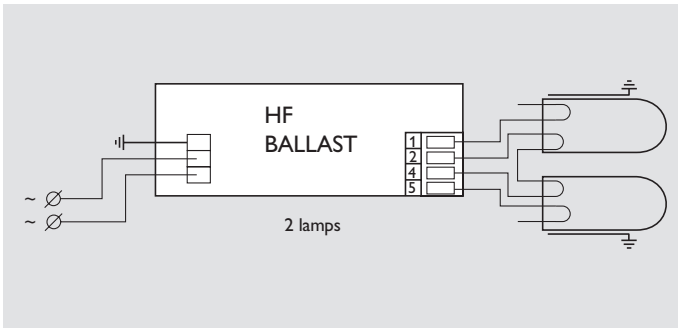
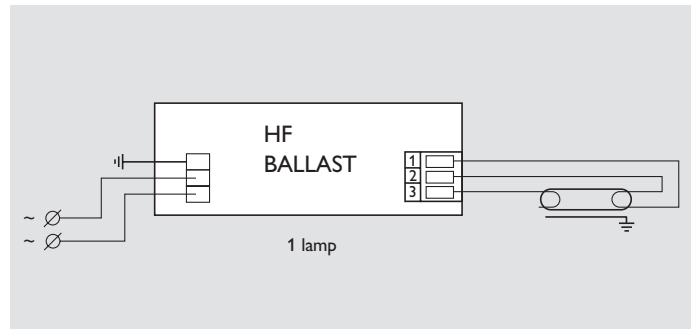
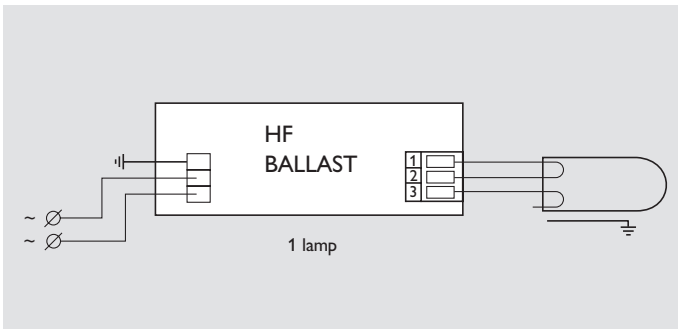
Max. T case = 75°C

Lifetime of a ballast depends on the temperature of the ballast. This means there is a relation between the Tc point on the ballast and its lifetime. The HF-Basic II ballast for TLD and PLL application has a specified lifetime of 50.000 hrs, with a maximum of 10% failures guaranteed, at a measured Tcase of 75°C

Hum and noise level inaudible

Permitted humidity is tested according to EN 61347-1 par. 11. Note that no moisture or condensation may enter the ballast.

The ballasts that are thermally protected use a protective method of another type providing equivalent thermal protection.



wiring diagrams

**Connector types:**

Wago universal connector. Suitable for both automatic wiring (ALF and ADS) and manual wiring

**Wire Lengths:**

For circuit 1 keep wire 3 short  
For circuit 2 keep wires 1 and 5 short

**Strip length:** 8 - 9 mm

**Wire cross-section:**

Lower connector

On the mains side: 0.5 - 1.0 mm<sup>2</sup>  
On the lamp side: 0.5 - 1.0 mm<sup>2</sup>

Upper connector

On the mains side: 0.5 mm<sup>2</sup> solid wire; 0.75 mm<sup>2</sup> stranded wire  
On the lamp side: 0.5 mm<sup>2</sup> solid wire; 0.75 mm<sup>2</sup> stranded wire

**Ordering and packing data**

| Ballast          | 1 Piece               |              | Bulk packing |  | Dimensions<br>l x w x h<br>cm | Volume<br>m <sup>3</sup> | Weight gross<br>kg | EAN code<br>8711500.. | EOC      |
|------------------|-----------------------|--------------|--------------|--|-------------------------------|--------------------------|--------------------|-----------------------|----------|
|                  | EAN code<br>8711500.. | Weight<br>kg | Qty.         |  |                               |                          |                    |                       |          |
| HF-B 136 TLD EII | 931542                | 0.21         | 12           |  | 32.8 X 20.6 X 8.7             | 0.006                    | 2.8                | 931559                | 93154230 |
| HF-B 236 TLD EII | 931580                | 0.23         | 12           |  | 32.8 X 20.6 X 8.7             | 0.006                    | 3.0                | 931597                | 93158030 |
| HF-B 158 TLD EII | 931566                | 0.21         | 12           |  | 32.8 X 20.6 X 8.7             | 0.006                    | 2.8                | 931573                | 93156630 |
| HF-B 258 TLD EII | 931603                | 0.24         | 12           |  | 32.8 X 20.6 X 8.7             | 0.006                    | 3.1                | 931610                | 93160330 |



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Data subject to change