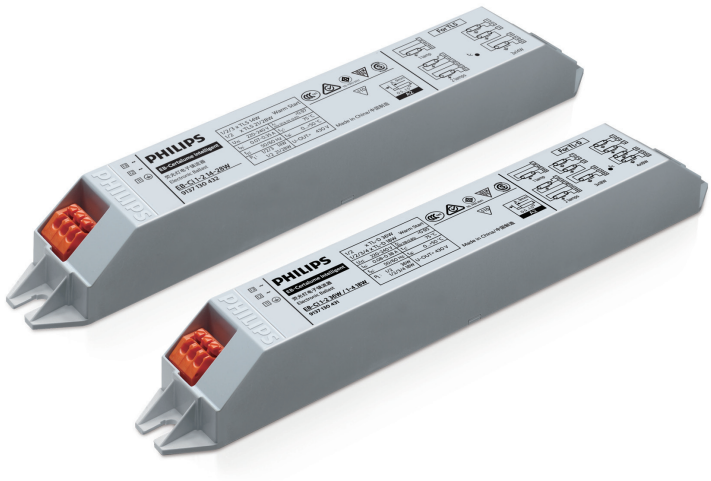
PHILIPS

EB-Certalume Intelligent

Lamp driver



EB-Certalume Intelligent

Fluorescent-Lamp Driver

The new EB-Ci is a futuristic product that intelligently drives all lamp combinations with one SKU. It is a cost-effective, extra reliable and outstanding solution for most common linear Fluorescent combinations.

An ideal solution where higher specs & max possibilities saves customers to keep stocks for several combinations & wattages.

Features and Benefits

- Energy efficient CELMA A2
- Safety acc IEC 61347-2-3
- EMC compliant to EN 55015 2006 + A1 2007 (9kHz-30MHz and 30MHz-300 MHz)
- Robust design for >45,000 hour lifetime at Ta 50 °C and avg. >6K on/off switches on one lamp
- High power factor 0.97 with THD < 16%
- Low CF ensures higher lamp life
- Quick warm, flicker-free lamp start
- Lamp ignition at -10 °C (TL-D) / 0 °C (TL5)
- 45 degree connector for easy connection with push button release
- Wide voltage range for ignition and operation (165V-253V)

Applications

Designed for applications where lamps burn for a long period of time and switching cycle (on/off) is infrequent.

Typical areas of application include:

- Professional indoor appl. (e.g. offices & hotels)
- Department stores, shops, supermarkets
- Public areas & Indoor lighting boxes
- General lighting areas in industries & homes

Quality

We ensure optimum quality regarding:

- Product safety: Ballast is protected against excessive mains voltage, incorrect connections and a safety stop is automatically activated in case of lamp failure.
- System supplier: As a manufacturer of both lamps and electronic ballast, Philips ensures that optimum lamp/ballast performance is maintained from the earliest development stage.
- International standards: Our ballast meet relevant rules and regulations related to safety, energy efficiency, EMC & immunity. Details can be found in the compliance and approval section.

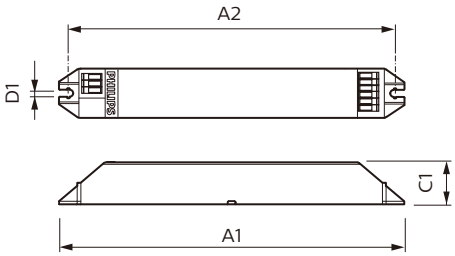
Compliances and approvals

Specification item	Value
RFI (9kHz-30Mhz)	EN 55015
RFI (30MHz-300Mhz)	EN 55015
Harmonics	IEC 61000-3-2
Safety	IEC 61347-2-3, IEC 61347-1
Vibration & bump tests	IEC 60068-2-6 FC, IEC 60068-2-29 FB
Quality standard	ISO 9001
Environmental standard	ISO 14001
Certificates	CB, CCC, TIS, PSB, SNI, IRAM, RCM, CS

Specification (all typical values at Vmains = 230V/50Hz)

	P-in (W)	P-Loss (W)	PF	CF	THD%
TLD 1 x 18	21.3	3.3	0.90	1.65	< 20
TLD 2 x 18	39.7	4.8	0.97	1.58	< 16
TLD 3 x 18	56.0	5.3	0.97	1.52	< 12
TLD 4 x 18	70.2	6.1	0.97	1.48	< 11
TLD 1 x 36	36.4	4.1	0.97	1.52	< 16
TLD 2 x 36	68.2	6.2	0.98	1.45	< 11
TL5 1 x 14	16.6	2.1	0.90	1.45	< 13
TL5 2 x 14	30.6	3.7	0.96	1.40	< 10
TL5 3 x 14	44.9	4.3	0.98	1.40	< 10
TL5 1 x 21	23.7	2.1	0.98	1.40	< 11
TL5 2 x 21	45.1	4.8	0.96	1.40	< 10
TL5 1 x 28	31.2	2.3	0.98	1.40	< 10
TL5 2 x 28	60.1	4.6	0.98	1.40	< 10

Dimensions



EB-Ci TLD/ EB-Ci TL5

Specification item	Value	Unit
Length overall (A1)	210	mm
Width overall (B1)	30	mm
Height overall (C1)	26	mm
Mounting Holes Distance (A2)	200	mm
Mounting Holes Size (D1)	4.3	mm

Inrush current

Specification item	EB-Ci TLD	EB-Ci TL5	Unit
Inrush current	19	17	A
Inrush current width	0.350	0.224	ms
Max bellast on B 16 A MCB	28	30	-

Technical data

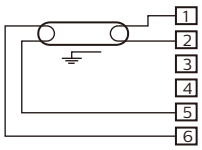
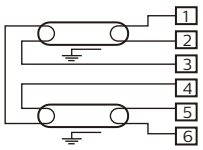
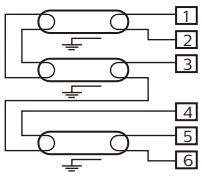
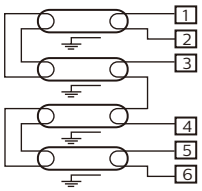
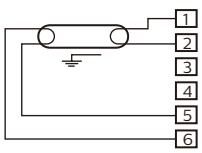
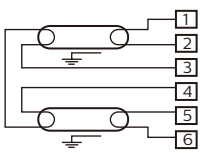
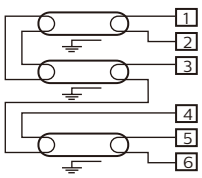
Specification item	Value
Rated mains voltage	220-240 V
With tolerances for safety±10%	198-264 V
With tolerances for ignition & buring +5%, -25%	165-253V
Mains frequency	50/60 Hz
Earth leakage current	< 0.5 mA per ballast
Ignition time	1.0 sec
Overvoltage protection	48 hrs at 320 V AC and 02 hrs at 350 V AC
Under voltage protection	48 hrs at 165 V AC
Max cable length hot side:	0.75 m
Total wire capacitance between hot and cold lamp wires	Max. 150 pF
Total wire capacitance between lamp wires to ground	Max. 150 pF
Energy efficiency index (EEI)	A2
BLF	1.0
Automatic restart after voltage dip	Yes
Tested with a dip down to	30%

Notes:
1. Ensure that the neutral is reconnected again after above mentioned test is carried out and before the installation is put into operation.

Wiring Recommendations

- The lead length is dependent on the capacitance of the cable.
- Earthing is not required for the device to operate.
- Connection to earth reduces radio interference.
- With standard solid wire 0.5/0.75 mm2 the capacitance of the lead is approx. 200 pF/m. This value is influenced by the way the wiring is made.
- In borderline cases the capacitance must be measured inside the luminary.
- Keep lamp wires short. Lamp connection with twin ballast should be made with symmetrical wiring. Max cable length hot side 0.75 m.
- Hot leads and cold leads should be separated as much as possible.
- To avoid the damage of the control gear, the wiring must be protected against short circuits to earth.

Wiring Diagram

	1 Lamp	2 Lamps	3 Lamps	4 Lamps
EB-Ci TLD	 1 x 18W/36W	 2 x 18W/36W	 3 x 18W	 4 x 18W
EB-Ci TL5	 1 x 14W/21W/28W	 2 x 14W/21W/28W	 3 x 14W(7)	

Notes:

1. Data is based on a mains supply with an impedance of 400mΩ, under worst case conditions. With an impedance of 800mΩ 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 advised 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.
7. Please note that 3x14W TL5 application is supported with 9.5K hrs (@12hr cycle) lamp life and 3K switching cycle.

Technical data for design and mounting EB-Ci ballasts in fixtures

Temperatures

Temperature range to ignite lamp with ignition aid	-10 °C to +50 °C
Max. T_{case}	75 °C
Failure rate 0.33% per	1000 hrs at 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 EB-Certalume ballast for TLD applications has a specified lifetime of 30,000 hrs, with a maximum of 10% failures guaranteed, at a measured Tcase of 75°C.

Independent lamp operation	No
Hum and noise level	< 30dB at 1m distance

Outdoor application

The ballast is primarily designed for Indoor application. For outdoor application, the luminaire should be minimum Class I and need to be sufficiently protected against water & dust. The installation should also be guard against any lightening surge or any other necessary electrical protection as deemed in such typical installation & application.

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

Connector types

Connection wiring is greatly simplified by the use of insert contacts with push buttons.

Wire length

After finishing system installation, please check carefully before you turn the power on.

1. Check whether lamp, ballast model and wiring are compatible according to Philips EB-Certalume datasheet.
2. Be sure the ground terminal of ballast are connected with metal luminaries or batten and earthed.
3. Keep wires to terminals 5, 6 short for all combinations.
4. Mismatch of the ballast and lamp may lead ballast failure.

Wire cross-section

On the mains side	0.5 ...1.5 mm^2
On the lamp side	0.5 ...1.5 mm^2
Strip length	7.5 ... 8.5 mm

Ordering Data

	Weight (kg)	Qty. Bulk pack (pcs)	Dim. Bulk pack (mm)	12NC
EB-Ci TLD	0.08	30	310 x 220 x 94	913713043180
EB-Ci TL5	0.08	30	310 x 220 x 94	913713043280

Date of release: April, 2017

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