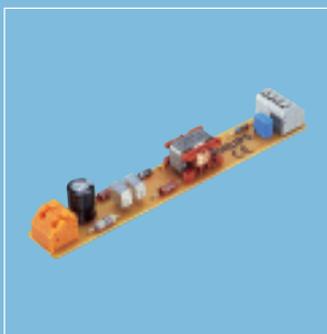




HF-MatchboxBLUE Linear



HF-MatchboxBLUE Square



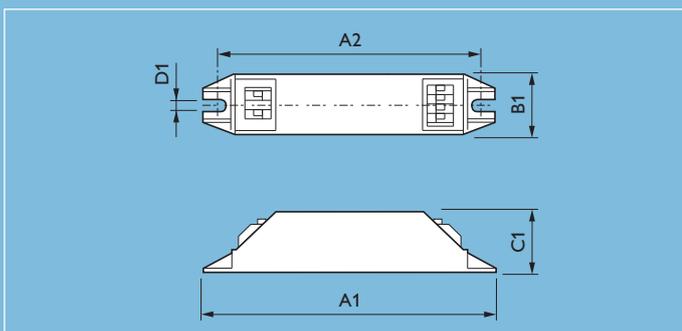
HF-MatchboxBLUE Linear (pcb)



HF-MatchboxBLUE Square (pcb)

recommended lamps pag. 4.4 and 4.10

Dimensions in mm



Definition

Compact, lightweight, high-frequency electronic ballast for TL (4-18 W), TL5 (14-24 W) and compact fluorescent PL (5-24 W) lamps.

Description

The HF-MatchboxBLUE is a new generation of electronic energy-saving ballasts for systems up to 25 W. As well as saving energy, they enhance design freedom for the Original Equipment Manufacturer.

- Instant start: flicker-free starting, ideal for lighting applications with long burning hours and infrequent switching; for optimum lamp life, it is advisable to use HF-MatchboxBLUE ballasts where the lighting is burning continuously for at least 3 hours (3-8 switchings per day), or in residential applications where the intensity of use is limited.
- Energy savings of more than 25% (at equal luminous flux) compared with electromagnetic gear
- Multi-lamp ballast: one type can be used to drive a single lamp of different types and wattages, e.g. a TL 6 or 8 W, or a PL-S 7, 9 or 11 W lamp can be connected to the HF-MatchboxBLUE 109 TL/PL-S ballast
- Compact power IC gives the ballast compact dimensions and low weight compared to electromagnetic ballasts that this design replaces
- Fixing centres for mounting remain same as equivalent electromagnetic ballasts.

HF-MatchboxBLUE ballasts can be supplied either as an encased ballast or open printed circuit board ready for building into a luminaire, in doing so ensuring optimum safety and lowest cost.

Applications

HF-MatchboxBLUE ballasts are designed for areas where the lighting is switched on and off infrequently

- HF-MatchboxBLUE should not be used in combination with movement/presence detection. 
- Typical areas of application in indoor residential situations include living rooms, kitchens (under cupboards), studies (desktop), bedrooms, halls, staircases and garages.
- Typical outdoor residential situations include driveways, porches, front doors and galleries
- Suitable for installations with emergency back-up, according to VDE 0108.
- For luminaires with protection class I and II; class I metal luminaires with earth connection require special measures for EMC compliance.

Philips quality

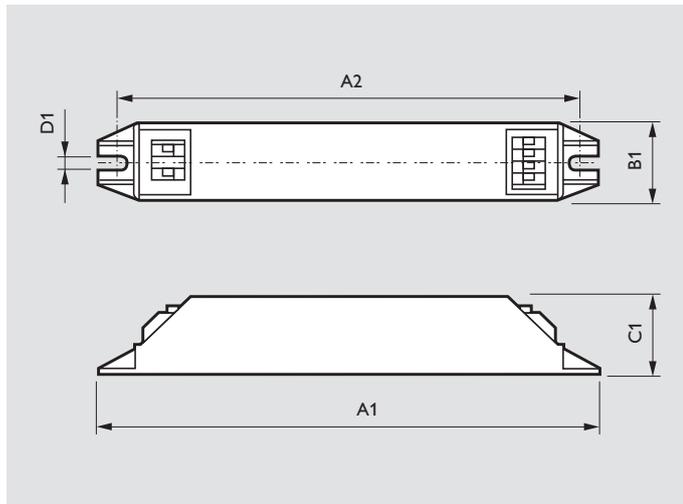
This implies optimum quality with regard to:

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

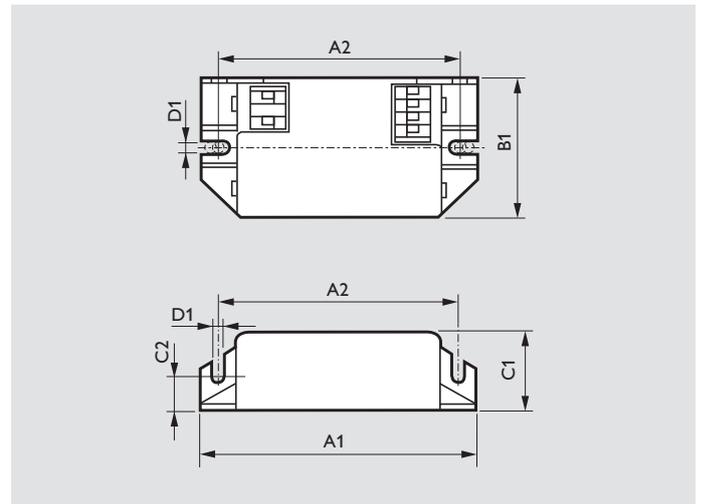
www.lampsandgear.philips.com

Compliances and approvals

- | | | | |
|---------------------|---------------|--|---|
| • RFI < 30 MHz: | EN 55015 | • Environmental standard: | ISO 14001 |
| • Harmonics: | EN 61000-3-2 | • Approval marks: | KEMA |
| • Immunity: | EN 61547 | | VDE-EMV |
| • Safety: | EN 60928 | • CE marking: | |
| | EN 61347-2-3 | • Temperature declared thermally protected | IEC 61347-1  |
| • Quality standard: | ISO 9000-2000 | | |



Dimensions in mm



Type	A1	A2	B1	C1	C2	D1	L	W	H
HF-MatchboxBLUE Linear housing									
HF-MatchboxBLUE 105	144	133	22	22	-	4.4			
HF-MatchboxBLUE 109	144	133	22	22	-	4.4			
HF-MatchboxBLUE 114	144	133	22	22	-	4.4			
HF-MatchboxBLUE 121	187	172	22	22	-	4.4			
HF-MatchboxBLUE 124	187	172	22	22	-	4.4			
HF-MatchboxBLUE 128	187	172	22	22	-	4.4			
HF-MatchboxBLUE Square housing									
HF-MatchboxBLUE 105	80	70	40	22	10	4.4			
HF-MatchboxBLUE 109	80	70	40	22	10	4.4			
HF-MatchboxBLUE 114	80	70	40	22	10	4.4			
HF-MatchboxBLUE 118	80	70	40	22	10	4.4			
HF-MatchboxBLUE 124	94	84	40	22	10	4.4			
HF-MatchboxBLUE 128	94	84	40	22	10	4.4			
HF-MatchboxBLUE Linear pcb									
HF-MatchboxBLUE 105							120	18	20
HF-MatchboxBLUE 109							120	18	20
HF-MatchboxBLUE 114							120	18	20
HF-MatchboxBLUE 121							160	18	20
HF-MatchboxBLUE 124							160	18	20
HF-MatchboxBLUE 128							160	18	20
HF-MatchboxBLUE Square pcb									
HF-MatchboxBLUE 105							56	36	20
HF-MatchboxBLUE 109							56	36	20
HF-MatchboxBLUE 114							56	36	20
HF-MatchboxBLUE 118							56	36	20
HF-MatchboxBLUE 124							70	36	20
HF-MatchboxBLUE 128							70	36	20

Technical data in relation to energy saving

Lamp	Ballast type	Energy efficiency	System power	Lamp Power	Mains	Lamp		
rrrent	current	index	W	W	mA	mA		
	Square	Linear						
TL 4W	HF-MatchboxBLUE 105 SH/SP TL/PL-S	HF-MatchboxBLUE 105 LH/LP TL/PL-S	A2	4.6	3.5	0.64	31	166
TL 6W	HF-MatchboxBLUE 109 SH/SP TL/PL-S	HF-MatchboxBLUE 109 LH/LP TL/PL-S	A2	6.8	5.5	0.62	47	163
TL 8W	HF-MatchboxBLUE 109 SH/SP TL/PL-S	HF-MatchboxBLUE 109 LH/LP TL/PL-S	A2	8.3	7.0	0.64	56	153
TL 13W	HF-MatchboxBLUE 114 SH/SP TL/TL5/PL	HF-MatchboxBLUE 114 LH/LP TL/TL5/PL	A2	14.4	12.3	0.63	98	154
TL-D 15W	HF-MatchboxBLUE 124 SH/SP TL/TL5/PL	-	A3	17.4	14.9	0.61	120	314
TL-D 18W	HF-MatchboxBLUE 124 SH/SP TL/TL5/PL	-	A2	19.0	16.9	0.62	133	310
TL-D 15W	-	HF-MatchboxBLUE 124 LH/LP TL/TL5/PL	A3	17.0	14.7	0.61	119	302
TL-D 18W	-	HF-MatchboxBLUE 124 LH/LP TL/TL5/PL	A2	18.4	16.2	0.62	127	297
TL5 14W HE	HF-MatchboxBLUE 114 SH/SP TL/TL5/PL	HF-MatchboxBLUE 114 LH/LP TL/TL5/PL	A2	14.7	12.8	0.64	100	157
TL5 21W HE	-	HF-MatchboxBLUE 121 LH/LP TL5	A2	23.7	21.3	0.64	157	168
TL5C 22W HO	HF-MatchboxBLUE 124 SH/SP TL/TL5/PL	-	A2	23.6	21.7	0.64	155	279
TL5 24W HO	HF-MatchboxBLUE 124 SH/SP TL/TL5/PL	-	A2	23.8	21.6	0.64	159	272
TL5C 22W HO	-	HF-MatchboxBLUE 124 LH/LP TL/TL5/PL	A2	22.7	20.9	0.64	150	269
TL5 24W HO	-	HF-MatchboxBLUE 124 LH/LP TL/TL5/PL	A2	23.0	20.8	0.64	155	265
TL5 28W HE	-	HF-MatchboxBLUE 128 LH/LP TL5	B1	24.1	19.6	0.63	167	105
PL-S 5W	HF-MatchboxBLUE 105 SH/SP TL/PL-S	HF-MatchboxBLUE 105 LH/LP TL/PL-S	A2	5.3	4.1	0.65	35	160
PL-S 7W	HF-MatchboxBLUE 109 SH/SP TL/PL-S	HF-MatchboxBLUE 109 LH/LP TL/PL-S	A2	7.0	5.8	0.62	49	162
PL-S 9W	HF-MatchboxBLUE 109 SH/SP TL/PL-S	HF-MatchboxBLUE 109 LH/LP TL/PL-S	A2	8.5	7.2	0.64	58	151
PL-S 11W	HF-MatchboxBLUE 109 SH/SP TL/PL-S	HF-MatchboxBLUE 109 LH/LP TL/PL-S	A2	12.0	10.7	0.64	97	162
PL-S 11W	HF-MatchboxBLUE 114 SH/SP TL/TL5/PL	HF-MatchboxBLUE 114 LH/LP TL/TL5/PL	A2	13.1	11.4	0.62	91	163
PL-C 10W	HF-MatchboxBLUE 114 SH/SP TL/TL5/PL	HF-MatchboxBLUE 114 LH/LP TL/TL5/PL	A2	10.3	8.7	0.60	74	184
PL-C 13W	HF-MatchboxBLUE 114 SH/SP TL/TL5/PL	HF-MatchboxBLUE 114 LH/LP TL/TL5/PL	A2	13.3	11.5	0.63	92	162
PL-C 18W	HF-MatchboxBLUE 118 SH/SP PL-C/PL-T	-	A2	18.1	15.8	0.63	123	202
PL-T 18W	HF-MatchboxBLUE 118 SH/SP PL-C/PL-T	-	A2	18.6	16.3	0.63	127	200
PL-L 18W	HF-MatchboxBLUE 124 SH/SP TL/TL5/PL	-	A3	17.3	14.9	0.61	119	316
PL-L 24W	HF-MatchboxBLUE 124 SH/SP TL/TL5/PL	-	A2	23.6	21.7	0.64	156	280
PL-L 18W	-	HF-MatchboxBLUE 124 LH/LP TL/TL5/PL	A3	16.8	14.6	0.61	117	301
PL-L 24W	-	HF-MatchboxBLUE 124 LH/LP TL/TL5/PL	A2	23.0	20.9	0.64	153	268
PL-Q 28W	HF-MatchboxBLUE 128 SH/SP PL-Q*	-						

* New product. For update of information see catalogue on www.lighting.philips.com

Technical data for installation

Mains operation		Automatic restart after lamp replacement or voltage dip	yes
Rated mains voltage	230-240 V	However, stop circuit will be activated (to protect ballast) in case of rectifying lamp or broken glass, and manual restart is required	
with tolerances for safety: +/- 10%	207-264 V		
tolerances for performance: +6% -8%	212-254 V		
Mains frequency	50/60 Hz		
Operating frequency	< 30 kHz	Cable capacity	to be advised
DC voltage operation during emergency back-up (external fuse is required):		Insulation resistance test	not relevant
Required battery voltage for guaranteed ignition and burning	194-254 V		
Lifetime			
At t_c 65 °C with 10% failures	40 000 hr		
Ignition time	< 0.5 s		
Overvoltage protection	not applicable		
Max t_{case}	75°C		
Lamp end-of-life detection/shut-off	yes		

Supply options

HF-MatchboxBLUE ballasts can be ordered either encased or as printed circuit board.

Encased ballasts are supplied fitted with plastic housings, and are either linear or square in shape. Encased ballasts are delivered in cardboard cartons.

Printed circuit boards (pcb's) have the same shape as the housings, and are supplied in multiple boards. Multiple boards will be supplied in cardboard cartons.

A detailed 'Instructions for use' is included in the packing of the printed circuit boards.

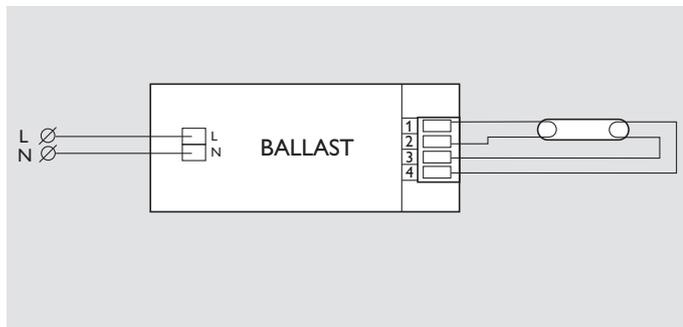
The ballasts that are thermally protected use a protective method of another type providing equivalent thermal protection.

Colour coding

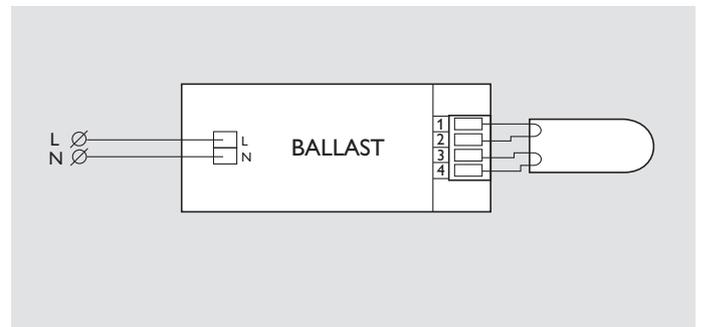
Type	Mains terminal colour code
HF-MatchboxBLUE 105	Orange/black/orange
HF-MatchboxBLUE 109	Orange/blue/orange
HF-MatchboxBLUE 114	Orange/grey/orange
HF-MatchboxBLUE 118	Orange/orange/orange
HF-MatchboxBLUE 121	Orange/grey/orange
HF-MatchboxBLUE 124	Orange/orange/orange
HF-MatchboxBLUE 128	Orange/blue/orange

To facilitate physical identification of pcb's, mains connector terminals are colour-coded.

The central connector terminal is coloured according to type.



Wiring diagrams



Technical data for design and mounting HF ballasts in fixtures

Temperature range to ignite lamp -10 to +40°C
(ignition aid is not required)

Hum and noise level inaudible

Max. tcase = 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. For more information regarding this subject consult the Philips Application guide to fluorescent lamp control gear.

Wire cross-section:

On the mains side: 0.5 - 1.5 mm²
On the lamp side: 0.5 - 1.5 mm²

Strip length: 8 - 9 mm

Wire lengths:

Distance between mains wires and lamp wires: > 5 cm

Keep wires to terminals 1 and 2 as short as possible (< 30 cm)

Keep wires to terminals 3 and 4 shorter than 150 cm

Ordering and packing data

Ballast	1 Piece		Bulk packing				EOC	
	EAN Code	Weight	Qty	Dimensions	Volume	Weight		EAN code
				l x w x h cm	gross m ³	kg		
Linear housed								
HF-MatchboxBLUE 105 LH TU/PL-S	8711500 536785	0.036	50	23.0 x 16.0 x 13	0.005	1.9	8711500 536792 536785 30	
HF-MatchboxBLUE 109 LH TU/PL-S	8711500 536808	0.036	50	23.0 x 16.0 x 13	0.005	1.9	8711500 536815 536808 30	
HF-MatchboxBLUE 114 LH TU/PL-S	8711500 536822	0.036	50	23.0 x 16.0 x 13	0.005	1.9	8711500 536839 536822 30	
HF-MatchboxBLUE 121 LH TL5	8711500 536464	0.048	50	23.0 x 20.0 x 13	0.006	2.5	8711500 536471 536464 30	
HF-MatchboxBLUE 124 LH TL/TL5/PL	8711500 536402	0.048	50	23.0 x 20.0 x 13	0.006	2.5	8711500 536419 536402 30	
HF-MatchboxBLUE 128 LH TL5	8711500 536433	0.048	50	23.0 x 16.0 x 13	0.006	2.5	8711500 932457 932433 30	
Linear pcb								
HF-MatchboxBLUE 105 LP TU/PL-S	8711500 536907	0.020	432	59.5 x 34.5 x 22	0.045	10.6	8711500 536914 536907 30	
HF-MatchboxBLUE 109 LP TU/PL-S	8711500 536921	0.020	432	59.5 x 34.5 x 22	0.045	10.6	8711500 536938 536921 30	
HF-MatchboxBLUE 114 LP TU/PL-S	8711500 536945	0.020	432	59.5 x 34.5 x 22	0.045	10.6	8711500 536952 536945 30	
HF-MatchboxBLUE 121 LP TL5	8711500 536488	0.025	216	59.5 x 34.5 x 22	0.045	7.0	8711500 536495 536488 30	
HF-MatchboxBLUE 124 LP TL/TL5/PL	8711500 536440	0.025	216	59.5 x 34.5 x 22	0.045	7.0	8711500 536457 536440 30	
HF-MatchboxBLUE 128 LP TL5	8711500 932419	0.025	216	59.5 x 34.5 x 22	0.045	7.0	8711500 932426 932419 30	
Square housed								
HF-MatchboxBLUE 105 SH TU/PL-S	8711500 536723	0.035	50	21.5 x 17.5 x 13	0.005	1.8	8711500 536730 536723 30	
HF-MatchboxBLUE 109 SH TU/PL-S	8711500 536747	0.035	50	21.5 x 17.5 x 13	0.005	1.8	8711500 536754 536747 30	
HF-MatchboxBLUE 114 SH TU/PL-S	8711500 536761	0.035	50	21.5 x 17.5 x 13	0.005	1.8	8711500 536778 536761 30	
HF-MatchboxBLUE 118 SH PL-C/PL-T	8711500 746160	0.037	50	21.5 x 17.5 x 13	0.005	1.8	8711500 746177 746160 30	
HF-MatchboxBLUE 124 SH TL/TL5/PL	8711500 536389	0.041	50	23.0 x 20.0 x 13	0.006	2.2	8711500 536396 536389 30	
HF-MatchboxBLUE 128 SH PLQ*				50				
Square pcb								
HF-MatchboxBLUE 105 SP TU/PL-S	8711500 536846	0.020	540	59.5 x 34.5 x 22	0.045	12.8	8711500 536853 536846 30	
HF-MatchboxBLUE 109 SP TU/PL-S	8711500 536860	0.020	540	59.5 x 34.5 x 22	0.045	12.8	8711500 536877 536860 30	
HF-MatchboxBLUE 114 SP TU/PL-S	8711500 536884	0.020	540	59.5 x 34.5 x 22	0.045	12.8	8711500 536891 536884 30	
HF-MatchboxBLUE 118 SP PL-C/PL-T	8711500 746184	0.022	540	59.5 x 34.5 x 22	0.045	17.3	8711500 746191 746184 30	
HF-MatchboxBLUE 124 SP TU/TL5/PL	8711500 536426	0.024	432	59.5 x 34.5 x 22	0.045	12.1	8711500 536433 536426 30	
HF-MatchboxBLUE 128 SP PLQ*			432					

* New product. For update of information see catalogue on www.lighting.philips.com