

Electronic ballasts for T5 fluorescent lamps

14-80 W 220-240 V, 50-60 Hz

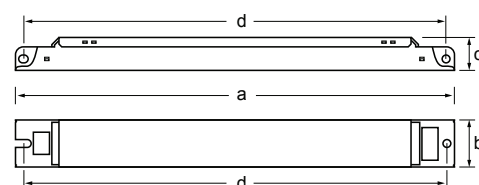
- Smallest available quality ballast
- Standard & sidemount possibilities
- Optimal lamp operation
- Low power losses
- Long lifetime
- Green values
- High power factor

**A2 BAT**

Lamp type	Wattage	No. of lamps	Ballast	EEL	Dimensions	Connection	Weight	Circuit power	Mains current	Lamp power
						(p.30)	(g)	(W)	(A)	(W)
T5	14	1	EL1x14-35ngn5	A2 BAT	1	1	127	15.5	0.08-0.06	13.7
	14	2	EL2x14-35ngn5	A2 BAT	2	12	204	31	0.16-0.15	13.7
	14	3	EL3/4x14ngn5	A2	2	6	204	46	0.22-0.19	13.7
	14	4	EL3/4x14ngn5	A2	2	7	204	62	0.29-0.26	13.7
	14	4	EL4x14ngn5	A2 BAT	2	7	190	63	0.30-0.26	13.7
	21	1	EL1x14-35ngn5	A2 BAT	1	1	127	23	0.12-0.10	20.7
	21	2	EL2x14-35ngn5	A2 BAT	2	12	204	45	0.22-0.19	20.7
	24	1	EL1x24ngn5	A2	1	1	130	25	0.12-0.11	22.5
	24	2	EL2x24ngn5	A2 BAT	2	8	193	49	0.24-0.21	22.5
	24	3	EL3/4x24ngn5	A2 BAT	2	6	208	73	0.34-0.30	22.5
	24	4	EL3/4x24ngn5	A2 BAT	2	7	208	97	0.44-0.40	22.5
	28	1	EL1x14-35ngn5	A2 BAT	1	1	127	30	0.15-0.12	27.8
	28	2	EL2x14-35ngn5	A2 BAT	2	12	204	60	0.29-0.25	27.8
	35	1	EL1x14-35ngn5	A2 BAT	1	1	127	38	0.18-0.16	34.7
	35	2	EL2x14-35ngn5	A2 BAT	2	12	204	75	0.35-0.31	34.7
	39	1	EL1x39/36ngn5	A2 BAT	1	1	130	42	0.19-0.18	38
	39	2	EL2x39/36ngn5	A2 BAT	2	8	195	81	0.36-0.32	38
	49	1	EL1x49ngn5	A2 BAT	1	1	130	55	0.25-0.23	49.3
	49	2	EL2x49ngn5	A2 BAT	2	12	211	105	0.50-0.45	49.3
	49	2	EL2x49ngn5-XL	A2 BAT	3	12	265	105	0.50-0.45	49.3
	54	1	EL1x54ngn5	A2 BAT	1	1	130	58	0.26-0.24	53.8
	54	2	EL2x54ngn5	A2 BAT	2	8	206	115	0.53-0.48	53.8
	54	2	EL2x54ngn5-XL	A2 BAT	3	8	260	115	0.53-0.48	53.8
	80	1	EL1x80ngn5	A2 BAT	2	1	192	86	0.42-0.36	80
	80	2	EL2x80ngn5	A2 BAT	3	12	300	170	0.80-0.73	80

Note: See pages 30-33 for connection diagrams and additional characteristics.

Dimensions	1	2	3
Length 'a' (mm)	190	280	360
Width 'b' (mm)	30	30	30
Height 'c' (mm)	21	21	21
'd' (mm)	180	270	350



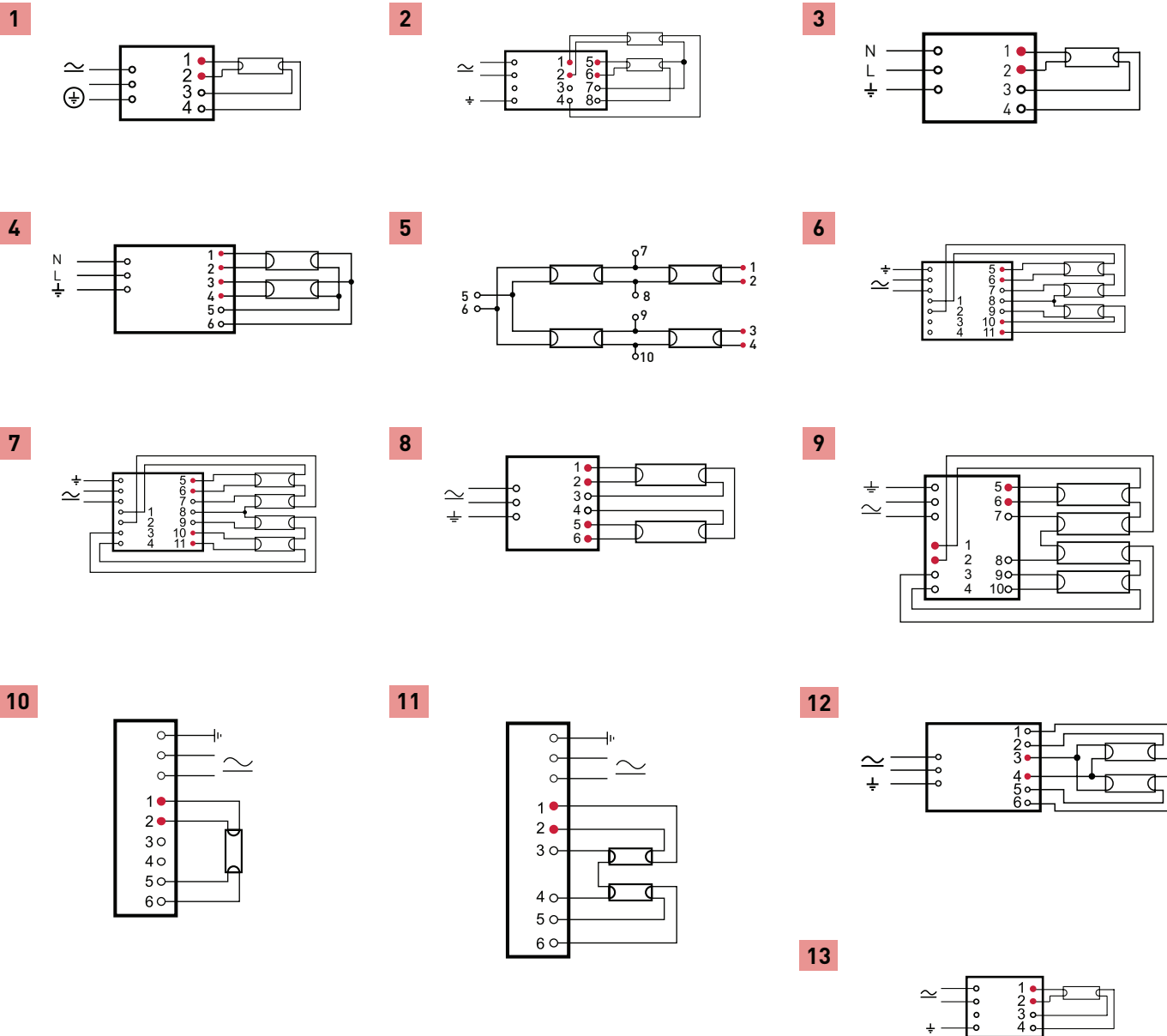
Delivery information

Ballast	Unit package		Transportation package		
	Minimum delivery amount	Plastic binding strip	One-way pallet 1200 x 820 (pcs.)	Pallet weight (kg)	Pallet height (cm)
EL1 x ngn5	10	●	2000	260-300	48
EL2 x ngn5 & EL3/4 x ngn5	10	●	2000	400-450	56
EL2x55ngn5 & EL2x80ngn5	10	●	1500	400-420	56

Connection diagrams

EL-ngn5, EL-s, EL-ngn, EL-es, EL-ef, EL-TCs

NOTE: All wiring to the connectors marked with a red dot (hot wires) should be as short as possible.



1	EL1x...ngn, EL1x...ngn5
2	EL2x58s, EL2x70s
3	EL1x18ef, EL1x36ef, EL1x58ef
4	EL2x18ef, EL2x36ef
5	EL4x18ef
6	EL3/4x18ngn (three lamp connection), EL3/4x14ngn5, EL3/4x24ngn5
7	EL3/4x18ngn (four lamp connection), EL3/4x14ngn5, EL3/4x24ngn5, EL4x14ngn5
8	EL2x18ngn, EL2x36ngn, EL2x58ngn, EL2x24ngn5, EL2x39/36ngn5, EL2x54ngn5, EL2x54ngn5-XL, EL2x55ngn5, EL2x36es, EL2x58es
9	EL4x18ngn, EL4x18es
10	EL1/2x14/17TCs, EL1/2x18-42TCs, EL1/2x18TCs, EL1/2x9-13TCs, EL1/2x36/38TCs
11	EL1/2x14/17TCs, EL1/2x18-42TCs, EL1/2x18TCs, EL1/2x9-13TCs, EL2x32/42TCs, EL1/2x36/38TCs
12	EL2x14-35ngn5, EL2x49ngn5, EL2x49ngn5-XL, EL2x80ngn5
13	EL1x ...s

	EL-s	EL-ngn	EL-ngn5	EL-es	EL-TCs	EL-ef
Max. temperature at t_c point	75 °C ³⁾	75 °C	75 °C ⁷⁾¹⁰⁾	75 °C	75 °C	70 °C
Ambient temperature range	-20...+50 °C	-20...+50 °C	-20...+50 °C ¹¹⁾	-15...+50 °C	-20...+50 °C	-15...+50 °C
Storage temperature range	-40...+80 °C	-40...+80 °C	-40...+80 °C	-40...+80 °C	-40...+80 °C	-40...+80 °C
Maximum relative humidity	no condensation	no condensation	no condensation	no condensation	no condensation	no condensation
Number of starts per lamp	> 50 000	> 60 000	> 50 000	> 20 000	> 50 000	> 6 000
AC Range	198-264 VAC ⁴⁾⁵⁾	198-264 VAC	198-264 VAC	198-264 VAC	198-264 VAC	220 - 240 VAC
DC range (starting voltage >190VDC)	176-280 VDC ⁵⁾	176-280 VDC	176-280 VDC	198-264 VDC ⁹⁾	176-280 VDC ¹¹⁾	220 - 240 VDC
Over voltage duration	320 VAC, 1 h	320 VAC, 1 h	320 VAC, 1 h	320 VAC, 1 h	320 V / 1 h	270 VAC, 2 h
Power factor (at maximum), typical	0.98	0.98	0.98	0.98	> 0.95	0.95
Earth leakage current	< 0.4 mA	< 0.4 mA	< 0.4 mA	< 0.4 mA	< 0.4 mA	< 0.4 mA
Maximum working voltage (Uout)	400 V	350 V ⁶⁾	400 V ⁶⁾	350 V ⁶⁾	250 V ²⁾	280 V ¹²⁾
Lifetime (90 % survival)	50 000 h, at t_c	60 000 h, at t_c	60 000 h, ⁸⁾ at t_c >100 000h, at T_a 50°C	50 000 h, at t_c	50 000 h, at t_c	30 000 h, at T_c 45 000 h, at T_a 50°C
Max length of ballast to lamp wiring	2 m	1.5 m	2 m	1.5 m	1 m / 2 m (hot / cold)	2 m
Ignition time, typical	~1.0 s	< 1 s	~1 s	< 2 s	~1 s	0.3 s

1) For 2 x 42 W lamp, DC range is 190-280 V

2) EL2x32/42TCs 300 V

3) For EL 2x70s, t_c = 70 °C

4) For EL2x70s AC range is 204-264 V

5) EL2x70s max 6 hours at 176-190 VDC

6) 3/4x18ngn, Uout = 400 V

7) 70 °C EL3/4x14ngn5

8) Please see page 33 for detailed information

9) Operationally suitable for emergency use with central battery

10) 85 °C, for EL-ngn5-XL-types

11) max T_a 65 °C, for EL-ngn5-XL-types

12) Uout = 380 V for EL2x36ef & EL4x18ef

Standards

	EL-s / EL-su	EL-ngn	EL-ngn5	EL-es	EL-TCs	EL-ef
General and safety requirements EN61347-2-3	●	●	●	●	●	●
Additional safety requirements for AC/DC supplied ballasts acc. to EN61347-2-3 Annex J	●	●	●	-	●	-
Performance requirements EN60929	●	●	●	●	●	-
Preheat starting	●	●	●	-	●	-
Lamp life acc. to EN60081 / EN60901 ^{*)}	●	●	●	●	●	●
Mains current harmonics, acc. to EN61000-3-2	●	●	●	●	●	●
Radio Frequency Interference, acc. to EN55015	●	●	●	●	●	●
Immunity standard, acc.to EN61547	●	●	●	●	●	●
Vibration test EN60068-2-64 test Fh	●	●	●	●	●	-
Bump test EN60068-2-29 test Eb	●	●	●	●	●	-
Thermal protection class EN61347, C5e	●	●	●	●	●	-
Type of starting: preheat (warm start)	●	●	●	●	●	-
EBLF (Emergency Ballast Lumen Factor)	-	-	>0,3	-	-	-
BLF (Ballast Lumen Factor)	-	-	~1	-	-	~1

* EN 60081 for T5 & T8 fluorescent lamps, EN 60901 for compact fluorescent lamps