EL-ngn

Electronic ballasts for T8 fluorescent lamps

Helvar
freedom in lighting

- Energy saving
- Warm Start according to lamp standards
- Flickerless light
- Covers EMC requirements
- Low harmonics
- Low power losses
- Stabilized output

14-58 W 220-240 V, 50-60 Hz

A2 BAT

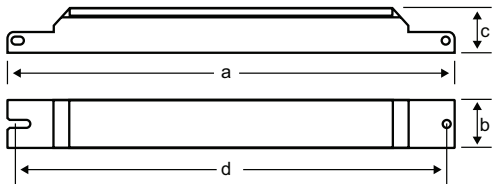
Lamp type	Wattage	No. of lamps	Ballast	EEI	Dimensions	Connection (p.30)	Weight (g)	Circuit power (W)	Mains current (A)	Lamp power (W)
T8	14	1	EL1x15ngn [1]	A2	3	1	120	15	0.09-0.07	13
	15	1	EL1x15ngn [1]	A2	3	1	120	15,5	0.09-0.07	13.5
	18	1	EL1x18ngn	A2	1	1	190	19	0.09-0.08	16
	18	2	EL2x18ngn	A2 BAT	1	8	200	37	0.16-0.15	16
	18	3	EL3/4x18ngn	A2	2	6	210	52	0.25-0.23	16
	18	4	EL3/4x18ngn	A2	2	7	210	69	0.33-0.30	16
	18	4	EL4x18ngn	A2 BAT	1	9	200	72	0.33-0.30	16
	30	1	EL1x30ngn [1]	A2 BAT	3	1	120	26,5	0.14-0.11	24
	36	1	EL1x36ngn	A2	1	1	191	36	0.16-0.15	32
	36	2	EL2x36ngn	A2 BAT	1	8	205	71	0.32-0.29	32
	58	1	EL1x58ngn	A2	1	1	193	55	0.26-0.23	50
	58	2	EL2x58ngn	A2 BAT	1	8	218	108	0.50-0.45	50

Note: See pages 31-32 for connection diagrams and additional characteristics.

1) ENEC and EMC approvals by request.

Dimensions	1	2	3
drawing	a	b	c
Length 'a' (mm)	280	280	190
Width 'b' (mm)	30	30	30
Height 'c' (mm)	28	21	21
'd' (mm)	270	270	180

a



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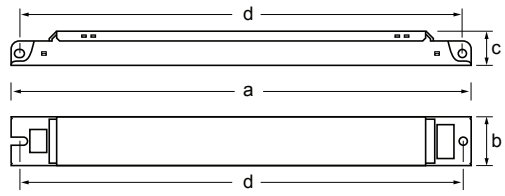
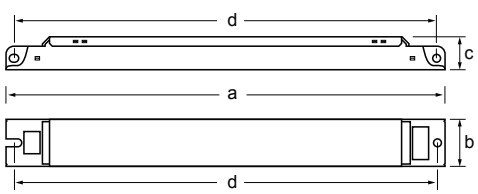


c



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 ngn	10	●	1600	330	60
EL2 x ngn	10	●	1600	320-360	60
EL3/4x18ngn	10	●	1500	385	57
EL4 x ngn	10	●	1600	370	60

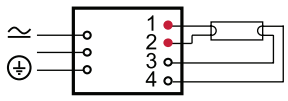
Note: Delivery information for EL1x15ngn and EL1x30ngn as on a page 21 for EL1 x ngn5

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



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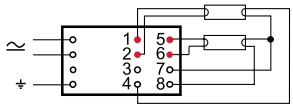

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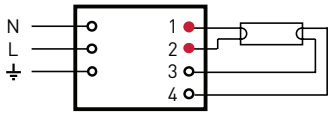

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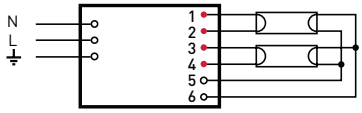

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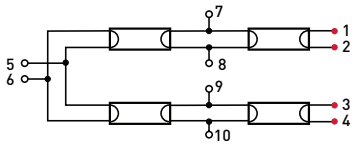

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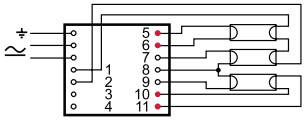

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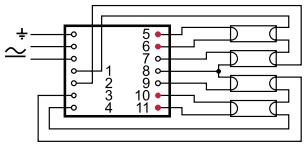

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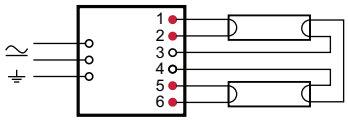

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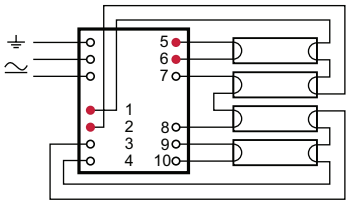

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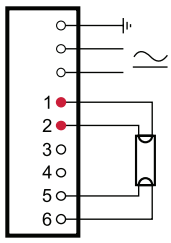

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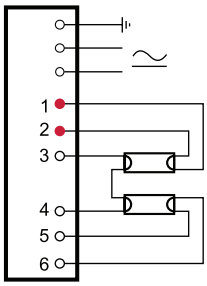

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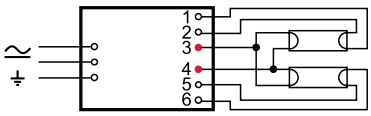

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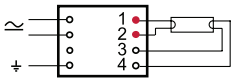

1	EL1x...ngn, EL1x...ngn5
2	EL2x58s, EL2x70s
3	EL1x18ef, EL1x36ef, EL1x58ef
4	EL2x18ef, EL2x36ef
5	EL4x18ef
6	EL3/4x18ngn (three lamp connection), EL3/4x14ngn5, EL3/4x24ngn5
7	EL3/4x18ngn (four lamp connection), EL3/4x14ngn5, EL3/4x24ngn5, EL4x14ngn5
8	EL2x18ngn, EL2x36ngn, EL2x58ngn, EL2x24ngn5, EL2x39/36ngn5, 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

Characteristics

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	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 [1]	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 Ta 50°C	50 000 h, at t_C	50 000 h, at t_C	30 000 h, at Tc 45 000 h, at Ta 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 Ta 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*