

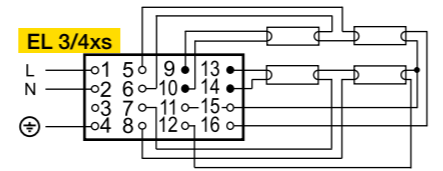
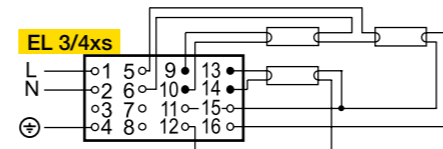
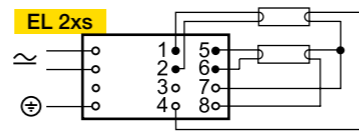
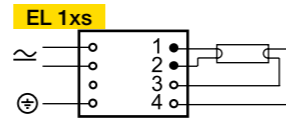
# Technical specifications



- Max. Temperature at tc point ..... 75°C \*
- Ambient temperature range ..... -20...+50°C
- Maximum relative humidity ..... no condensation
- Number of starts per lamp ..... >50 000
- Operating voltage AC/DC ..... 190-264V\*
- Battery voltage ..... 176-280VDC\*
- Over voltage duration ..... 320 VAC, 1h
- Power factor, typical ..... 0.98
- Earth leakage current ..... < 0.4 mA
- Lifetime (90% survival) ..... 50 000 h, at Tc max.
- General and safety requirements ..... EN 61347-2-3
- - End of lifetime acc. to ..... 17.2
- Additional safety requirements for AC/DC supplied ballasts acc. to .. EN 61347-2-3 Annex J
- Performance requirements ..... EN 60929
- Radio Frequency Interference, acc. to ..... EN 55015
- Immunity standard, acc. to ..... EN 61547
- Central battery use acc. to ..... VDE0108

\* The latest and more specific technical data is available from the product catalogue on our website.

Lamp type	W	No. of lamps	Ballast	Weight (g)	Circuit power (W)	Mains current (A)	Operating frequency (kHz)	Lamp power (W)	s-u option
T8	18	1	EL 1x18s	190	18	0.09-0.08	68	16	
		2	EL 2x18s	230	34.5	0.16-0.15	67	16	
		3	EL 3/4x18s	250	52	0.25-0.23	63	16	X
		4	EL 3/4x18s	250	69	0.33-0.30	63	16	X
	36	1	EL 1x36/40/18s	190	35	0.16-0.15	61	32	X
		2	EL 2x36/40s	245	69	0.32-0.29	67	32	X
58	1	EL 1x58s	200	54	0.23-0.26	49	50	X	
	2	EL 2x58s	260	106.5	0.50-0.45	48	50	X	
70	1	EL 1x70s	200	64.5	0.30-0.28	46	60		
	2	EL 2x70s	260	128	0.59-0.54	48	60		
TC-L	18	1	EL 1x36/40/18s	190	18	0.09-0.08	61	16	
		2	EL 2x36/40s	245	69	0.32-0.29	67	32	
	24	1	EL 1x24s	190	25	0.12-0.11	68	22.5	
		2	EL 2x24s	230	49	0.24-0.21	67	22.5	
	36	1	EL 1x39/36s	190	35	0.16-0.15	59	32	
		2	EL 2x39/36s	245	69	0.32-0.29	62	32	
	40	1	EL 1x36/40/18s	190	45	0.20-0.18	61	40	X
		2	EL 2x36/40s	245	87	0.40-0.36	67	40	X
	55	1	EL 1x55s	200	59.5	0.28-0.25	57	55	
		2	EL 2x55s	260	113.5	0.55-0.50	56	54	
80	1	EL 1x80s	200	85	0.40-0.36	54	80		
	2	EL 2x80s	400	170	0.80-0.72	54	80		
T5	14	1	EL 1x14-35s	175	15.5	0.08-0.07	66	13.7	X
		2	EL 2x14-35s	250	31	0.15-0.13	63	13.7	X
		3	EL 3/4x14s	250	46	0.22-0.19	62	13.7	X
		4	EL 3/4x14s	250	62	0.29-0.26	62	13.7	X
	21	1	EL 1x14-35s	190	23	0.12-0.10	66	20.7	X
		2	EL 2x14-35s	250	45	0.20-0.18	63	20.7	X
	24	1	EL 1x24s	175	25	0.12-0.11	68	22.5	
		2	EL 2x24s	230	49	0.24-0.21	67	22.5	
	28	1	EL 1x14-35s	175	30	0.15-0.12	66	27.8	X
		2	EL 2x14-35s	250	60	0.27-0.25	63	27.8	X
	35	1	EL 1x14-35s	175	38	0.19-0.16	66	34.7	X
		2	EL 2x14-35s	250	75	0.34-0.31	63	34.7	X
	39	1	EL 1x39/36s	190	42	0.19-0.18	59	38	
		2	EL 2x39/36s	245	81	0.36-0.32	62	38	
49	1	EL 1x49s	190	52.5	0.25-0.23	57	49.3	X	
	2	EL 2x49s	260	104	0.50-0.46	47	49.3	X	
54	1	EL 1x54s	200	58	0.23-0.26	49	53.8		
	2	EL 2x54s	260	114.5	0.50-0.45	48	53.8		
80	1	EL 1x80s	200	85	0.40-0.36	54	80		
	2	EL 2x80s	400	170	0.80-0.72	54	80		



Dimensions	EL 1x..s	EL 2x..s & EL3/4..s**
a(mm)	280	360
b(mm)	30	30
c(mm)	21	21
d(mm)	270	350



\*\* EL3/4...s-u version shorter

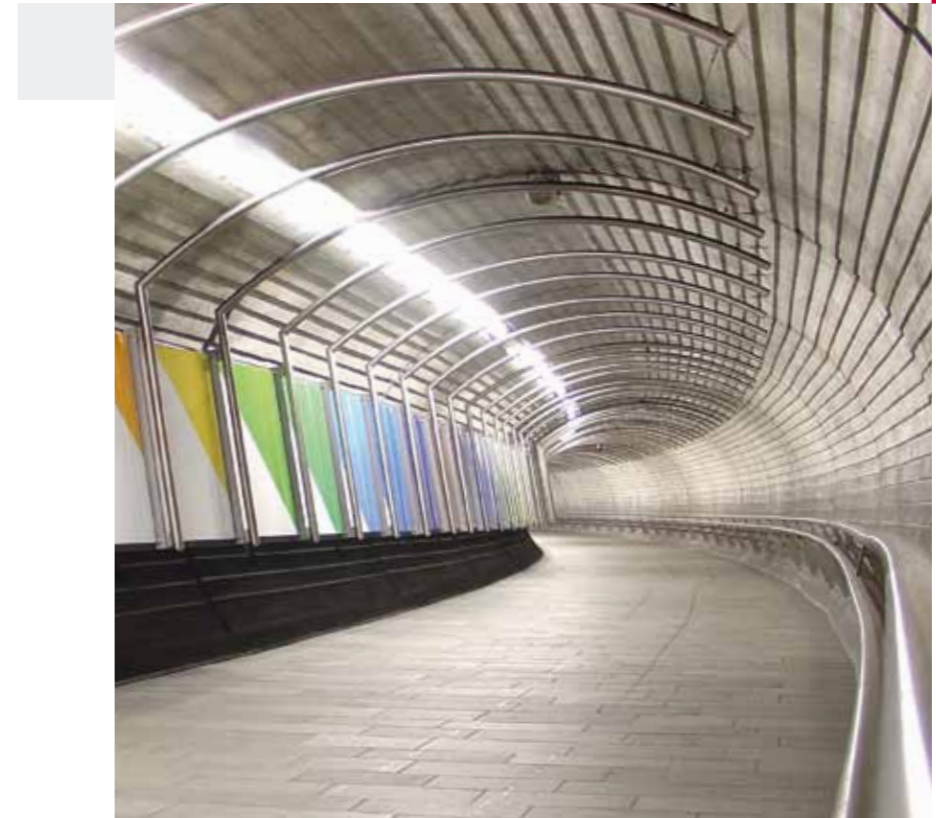
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Ref. O 07 097 C English



EL-s top of the range

# EL-s for T5, TC-L and T8 lamps

Helvar is the pioneer in slim ballast design. The EL-s range for T5, TC-L and T8 lamps is always kept up to date with the market needs fulfilling the most challenging luminaire requirements.

## Low operating temperature

The ballast temperature is kept low even in abnormal operating conditions. This ensures that the ballasts maintain a long lifetime even when installed in hot environments, such as waterproof fittings.

## Extremely low system losses

Due to the low ballast temperatures and system losses all ballasts easily fulfil CELMA classification EEI A2, which is the most energy efficient classification for switchable ballasts.

## Wide operating temperature range

Every EL-s ballast is designed to operate in harsh conditions from -20 to +50°C, making them suitable for use in cold rooms, car parks, warehouses, etc.



## Multi-lamp operation

Additional logistical benefits can be achieved with the new EL-s range. For instance only one ballast is needed to operate the entire HE T5 lamp range, 14W, 21W, 28W or 35W.

The best possible luminous efficiency will always be achieved from any HE T5 lamp.

Helvar also offer other multi-lamp combinations:

- 36W T8, 40W and 18W TC-L
- 24W T5 and TC-L
- 39W T5 and 36W TC-L

## Superior functionality:

**OCC™** – Optimum Cathode Control is the operating method of the EL-s, which ensures the electrical parameters supplied to the lamp are always the best possible, minimising the system losses and maximising the lamp lifetime.

## Key benefits:

- Low losses
- Cooler
- Multi-lamp
- Small size and light weight
- OCC™ - Optimum Cathode Control



## Slim luminaire design

The optimum dimensions of the EL-s ballast range allow for extremely low profiles in luminaire designs. The limited space in luminaires can be used very effectively due to the slim design and sidemount option provided as standard by the EL-s.

## Alternative terminals

To increase luminaire productivity Helvar as well offers a ballast variant equipped with universal terminals. These EL-s-u ballasts are suitable for automated wiring in both vertical and horizontal orientation.

## Emergency use

Due to a wide operating DC voltage the entire ballast range is suitable for emergency use with central batteries. The ballast can also be used with local batteries.

## Highest protection and safety

The superior technology used in the design process of the EL-s family ensures the lowest levels of electromagnetic disturbance. Operation in protection class II\* luminaires is possible even without connecting the protective earth. The ballasts are also protected against wrong lamp insertion, so there is no safety risk for the user in these situations. The ballast can as well withstand this without being damaged.

