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DALI electronic ballasts

EL-iDim DALI ballasts are designed for a broad range of applications from the smallest intelligent luminaires to major lighting installations in large building complexes. What's more, they offer the important advantage of enabling everything to be achieved with the same ballasts. EL-iDim DALI ballasts are also fully compatible with Helvar iDim sensors, the combination creating the latest high-tech innovation available to the lighting market.

With out-of-box functionality, the Helvar system is moreover, easy to install and use, and maintenance costs are always kept to a minimum.

In the design of EL-iDim, customer input played a crucial role – leading to superior features such as:

- OCC technology, guaranteeing the highest possible EEI = A1 BAT
- The lowest stand-by power in the market, which even today meets the upcoming EuP directives of 2012
- Smooth and stepless dimming from 100% to 1%
- Multi-lamp operation, allowing one ballast to drive all HE-T5 lamps

The ballasts also have an in-built data register capable of storing information on running hours, energy consumption, mains voltage, lamp voltage etc. This can be very useful in large installations where the control and maintenance of lighting is centralized in one monitoring room.

OCC™ -

Optimum Cathode Control

The proven OCC™ - Optimum Cathode Control technology used in Helvar EL-s, EL-sc, EL-iDim and EL-TCs electronic ballast ranges.

OCC™ ensures that the electrical parameters supplied to the lamp are always optimum, minimising system losses and maximising lamp lifetime. The achieved energy saving is considerable compared to existing ballasts on the market.

Digital DALI electronic ballasts for T5 fluorescent lamps




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

- Digital DALI control
- Switch-Control
- Stand-by consumption 0.3 W
- Dimming range 1-100% *)
- Only 21mm high
- Microprocessor controlled
- Standard & Side mounting
- User friendly, quick release connectors



A1 BAT

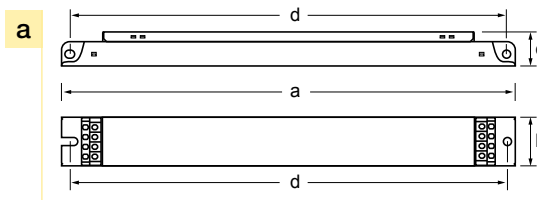
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Lamp type	Wattage	No. of lamps	Ballast	EEL	Dimensions	Connection	Weight	Circuit power	Mains current	Lamp power
							(p.30)	(g)	(W)	(A)
	14	1	EL1x14-35iDim	A1 BAT	1	1	250	17	0.08-0.07	13.7
	14	2	EL2x14-35iDim	A1 BAT	2	2	330	32.5	0.15-0.14	13.7
	14	3	EL3x14iDim	A1 BAT	2	3	310	47.5	0.22-0.20	13.7
	14	4	EL4x14iDim	A1 BAT	2	4	330	62	0.29-0.27	13.7
	21	1	EL1x14-35iDim	A1 BAT	1	1	250	23.5	0.11-0.10	20.7
	21	2	EL2x14-35iDim	A1 BAT	2	2	330	46	0.22-0.20	20.7
	24	1	EL1x24iDim	A1 BAT	1	1	250	25.5	0.12-0.10	22.5
	24	2	EL2x24iDim	A1 BAT	2	2	330	50.5	0.23-0.21	22.5
	28	1	EL1x14-35iDim	A1 BAT	1	1	250	32	0.15-0.14	27.8
	28	2	EL2x14-35iDim	A1 BAT	2	2	330	62	0.28-0.26	27.8
	35	1	EL1x14-35iDim	A1 BAT	1	1	250	39	0.18-0.17	34.7
	35	2	EL2x14-35iDim	A1 BAT	2	2	330	73.5	0.36-0.30	34.7
	39	1	EL1x39iDim	A1 BAT	1	1	250	42.5	0.20-0.18	38
	39	2	EL2x39iDim	A1 BAT	2	2	330	82.5	0.38-0.35	38
	49	1	EL1x49iDim	A1 BAT	1	1	250	55	0.25-0.23	49.3
	49	2	EL2x49iDim	A1 BAT	2	2	330	107.5	0.49-0.45	49.3
54	1	EL1x54iDim	A1 BAT	1	1	250	59	0.27-0.25	53.8	
54	2	EL2x54iDim	A1 BAT	2	2	330	117	0.53-0.49	53.8	
80	1	EL1x80iDim	A1 BAT	1	1	250	86	0.39-0.36	80	

Note: See pages 30-32 for connection diagrams and additional characteristics.

* Dimming range 3-100% for EL3x14iDim & EL4x14iDim

Dimensions	1	2
Length 'a' (mm)	360	430
Width 'b' (mm)	30	30
Height 'c' (mm)	21	21
'd' (mm)	350	420



Delivery information

Ballast	Unit package		Transportation package		
	Minimum delivery amount	Plastic binding strip	EUR pallet 1200 x 800 (pcs.)	Pallet weight (kg)	Pallet height (cm)
EL1 x iDim	10	●	980	300	40
EL2 x iDim	10	●	840	325	43
EL3 x iDim	10	●	840	325	43
EL4 x iDim	10	●	840	325	43

Right to use German patent DE19757295 of Tridonic Atco

Digital DALI electronic ballasts for T8 fluorescent lamps



- Digital DALI control
- Switch-Control
- Stand-by consumption 0.3 W
- Dimming range 1-100%
- Only 21mm high
- Microprocessor controlled
- Standard & Side mounting
- User friendly, quick release connectors

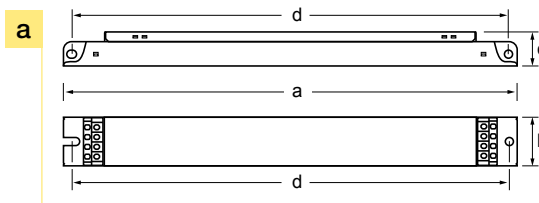


A1 BAT

Lamp type	Wattage	No. of lamps	Ballast	EEL	Dimensions	Connection	Weight	Circuit power	Mains current	Lamp power
						(p.30)	(g)	(W)	(A)	(W)
T8	36	1	EL1x36iDim	A1 BAT	1	1	250	35.5	0.17-0.15	32
	36	2	EL2x36iDim	A1 BAT	2	2	330	70.5	0.32-0.30	32

Note: See pages 30-32 for connection diagrams and additional characteristics.

Dimensions	1	2
Length 'a' (mm)	360	430
Width 'b' (mm)	30	30
Height 'c' (mm)	21	21
'd' (mm)	350	420



Delivery information					
Ballast	Unit package		Transportation package		
	Minimum delivery amount	Plastic binding strip	EUR pallet 1200 x 800 (pcs.)	Pallet weight (kg)	Pallet height (cm)
EL1 x iDim	10	●	980	300	40
EL2 x iDim	10	●	840	325	43

Digital DALI electronic ballasts for compact fluorescent lamps



24 - 80 W 220-240V 50-60Hz

- Digital DALI control
- Switch-Control
- Stand-by consumption 0.3 W
- Dimming range 1-100%
- Only 21mm high
- Microprocessor controlled
- Standard & Side mounting
- User friendly, quick release connectors



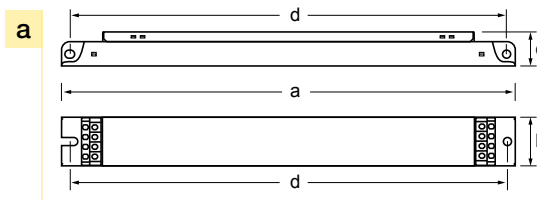
A1 BAT

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Lamp type	Wattage	No. of lamps	Ballast	EEL	Dimensions	Connection	Weight	Circuit power	Mains current	Lamp power
							(g)	(W)	(A)	(W)
TC-L	24	1	EL1x24iDim	A1 BAT	1	1	250	25.5	0.12-0.10	22.5
	24	2	EL2x24iDim	A1 BAT	2	2	330	50.5	0.23-0.21	22.5
	36	1	EL1x36iDim	A1 BAT	1	1	250	35.5	0.17-0.15	32
	36	2	EL2x36iDim	A1 BAT	2	2	330	70.5	0.32-0.30	32
	55	1	EL1x55iDim	A1 BAT	1	1	250	59.5	0.27-0.25	55
	55	2	EL2x55iDim	A1 BAT	2	2	330	119.5	0.55-0.50	55
	80	1	EL1x80iDim	A1 BAT	1	1	250	86	0.39-0.36	80

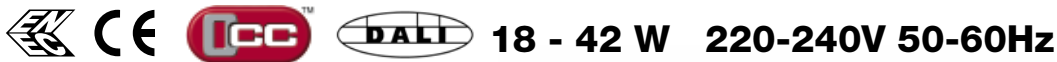
Note: See pages 30-32 for connection diagrams and additional characteristics.

Dimensions	1	2
Length 'a' (mm)	360	430
Width 'b' (mm)	30	30
Height 'c' (mm)	21	21
'd' (mm)	350	420



Delivery information					
Ballast	Unit package		Transportation package		
	Minimum delivery amount	Plastic binding strip	EUR pallet 1200 x 800 (pcs.)	Pallet weight (kg)	Pallet height (cm)
EL1 x iDim	10	●	980	300	40
EL2 x iDim	10	●	840	325	43

Digital DALI electronic ballasts for compact fluorescent lamps



- Digital DALI control
- Switch-Control
- Stand-by consumption 0.3 W
- Dimming range 3-100%
- Multilamp operation
- Single and twin lamp operation



A1 BAT

PRELIMINARY INFORMATION

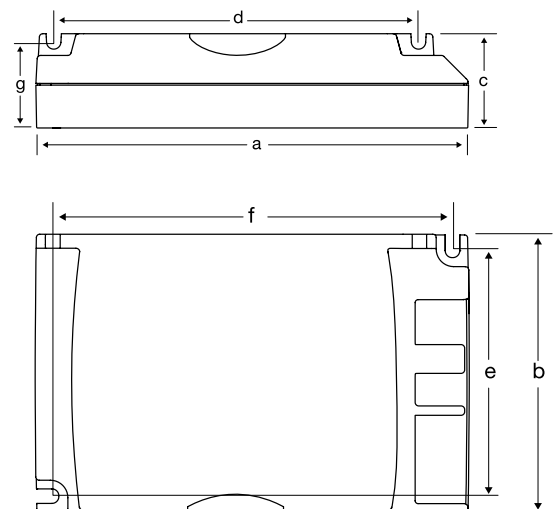
Lamp type	Wattage	No. of lamps	Ballast	EEL	Dimensions	Connection	Weight	Circuit power	Mains current	Lamp power
						(p.30)	(g)	(W)	(A)	(W)
TC-L/ TC-F	18	1	EL1/2x18/24iDim-c	A1 BAT	123x79x28	5	155	18	0.1	15.5
	18	2	EL1/2x18/24iDim-c	A1 BAT	123x79x28	6	155	34	0.16	15.5
	24	1	EL1/2x18/24iDim-c	A1 BAT	123x79x28	5	155	26	0.13	23
	24	2	EL1/2x18/24iDim-c	A1 BAT	123x79x28	6	155	51	0.23	23.5
T5c	22	1	EL1/2x18/24iDim-c	A1 BAT	123x79x28	5	155	26.5	0.13	23
	40	1	EL1/2x18/24iDim-c	A1 BAT	123x79x28	5	155	42.5	0.19	39.5
TC-DE/ TC-TE	18	1	EL1/2x18iDim-c	A1 BAT	123x79x28	5	155	20	0.09	16.5
	18	2	EL1/2x18iDim-c	A1 BAT	123x79x28	6	155	38	0.17	16.5
	26	1	EL1/2x26-42iDim-c	A1 BAT	123x79x28	5	155	28	0.13	23
	26	2	EL1/2x26-42iDim-c	A1 BAT	123x79x28	6	155	56	0.25	23.5
	26	2	EL2x26-42iDim-c	A1 BAT	123x79x28	7	175	54	0.24	24
	32	1	EL1/2x26-42iDim-c	A1 BAT	123x79x28	5	155	35	0.16	31
	32	2	EL2x26-42iDim-c	A1 BAT	123x79x28	7	175	70	0.30	32
	42	1	EL1/2x26-42iDim-c	A1 BAT	123x79x28	5	155	46	0.2	41.5
42	2	EL2x26-42iDim-c	A1 BAT	123x79x28	7	175	93	0.40	43	

Note: See pages 30-32 for connection diagrams and additional characteristics.

PRELIMINARY INFORMATION

Dimensions	
Length 'a' (mm)	123.0
Width 'b' (mm)	79.0
Height 'c' (mm)	28.0
'd' (mm)	100.5
'e' (mm)	65.0
'f' (mm)	111.0
'g' (mm)	25.5

Ballast	Unit package		Transportation package		
	Minimum delivery amount	Carton Box	Pallet 820 x 1280 (pcs.)	Pallet weight (kg)	Pallet height (cm)
EL-iDim-c	40	●	800	148	48



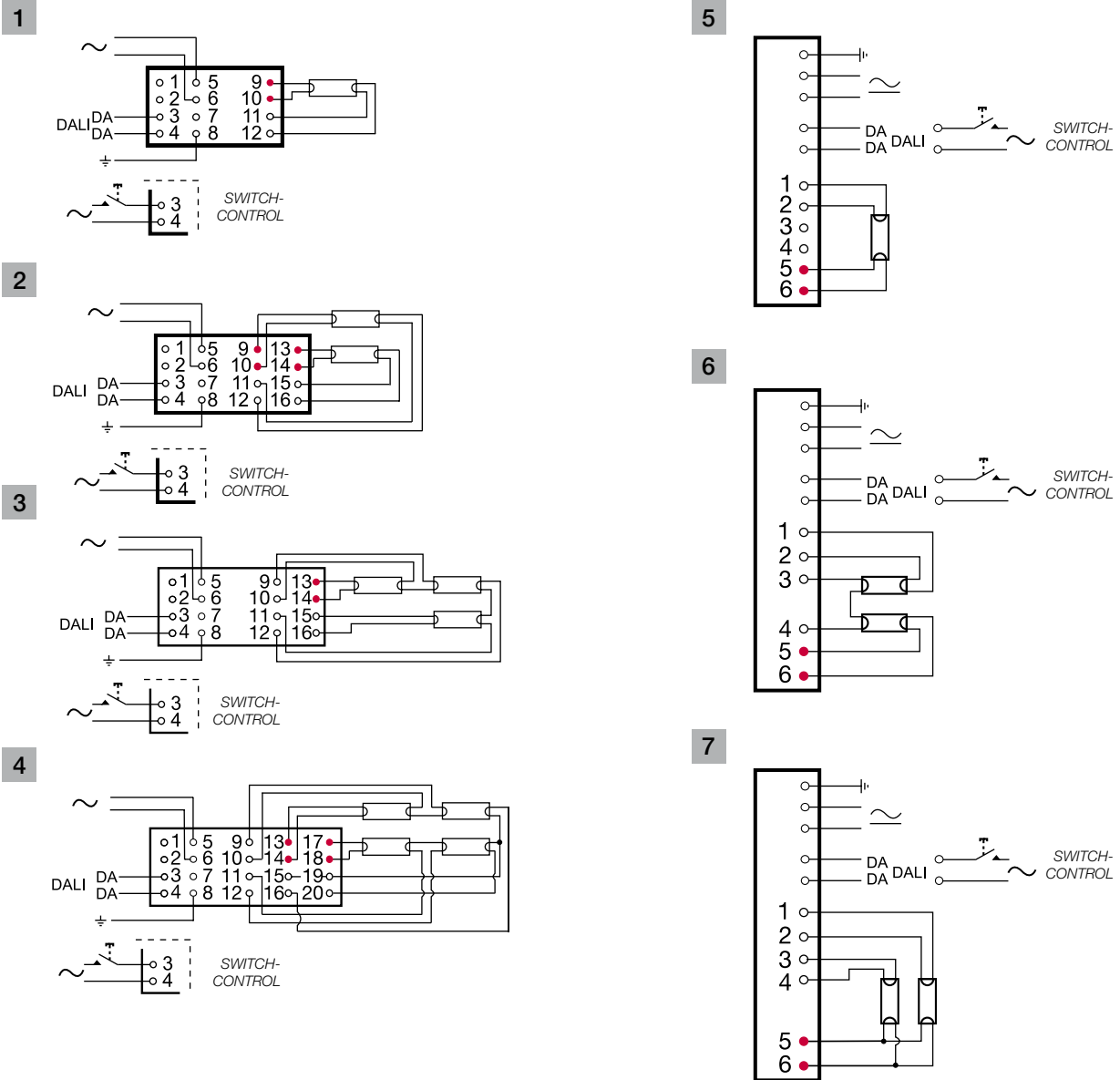
Right to use German patent DE19757295 of Tridonic Atco

Data is subject to change without notice. More information at: www.helvar.com

Connection diagrams

EL-iDim

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



1	EL1x ...iDim
2	EL2x ...iDim
3	EL3x ...iDim
4	EL4x ...iDim
5	EL1/2x...iDim-c
6	EL1/2x...iDim-c, EL2x...iDim-c

Characteristics

	EL-iDim	EL-iDim-c
Max.temperature at t _c point	75°C ³⁾	TBD
Ambient temperature range	+10...+50°C ¹⁾	+10...+50°C
Storage temperature range	-40...+80°C	-40...+80°C
Maximum relative humidity	no condensation	no condensation
Number of starts per lamp	> 50 000	> 50 000
AC Range	198-264 VAC	198-264 VAC
DC range (starting voltage >198VDC)	176-280 VDC	176-280 VDC
Over voltage duration	320 VAC, 1h	320 VAC, 1h
Power factor (at maximum), typical	0.96	0.96
Earth leakage current	< 0.4 mA	< 0.4 mA
Maximum working voltage (U _{out})	400 V	400 V
Lifetime (90% survival)	50 000 h, at t _c	50 000 h, at t _c
Max length of ballast to lamp wiring	1.5 m / 2 m (hot / cold) ²⁾⁴⁾	1 m / 1 m (hot / cold) ⁴⁾
Ignition time, typical	1.0 s	1.0 s
Type of starting	Preheat (warm start)	Preheat (warm start)

1) To ensure stable operation of TC-L lamps in ambient temperatures below 18°C it is not recommended to dim the light level below 3%

2) For TC-L lamps 1 m / 2 m (hot/cold lamp wires)

3) For EL 3x14iDim, t_c = 65°C

4) Minimise lamp wire length variations in order to avoid imbalance in light output.

Standards

	EL-iDim	EL-iDim-c
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	●	●
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	●	●

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

Switch-Control Information, EL-iDim ballasts

Switch-Control provides ON/OFF switching and UP/DOWN dimming functionality from one or more simple switches.

Switch-Control and DALI can not be connected to the iDim ballast at the same time.

Suitable switch:

- Automatic return type
- Mains rated

Connection:

- EL-iDim ballasts: To the DALI input
- Wire length: 25m maximum. diagram A
25 - 200m, use a capacitor (1 μ F, 275V) diagram B
- Ballasts per switch: 50 (observe above)
- Ensure all ballasts and associated switches are connected to the same mains phase

Operation:

- Switch off: Short push of the switch (<0.4 second)
- Switch on: Short push of the switch (<0.4 second)
- EL-iDim ballasts will switch on to the last set level
- Dimming: Long push of the switch (>0.5 second)
 - If lamps are off, the ballast dims up from minimum
 - If lamps are on, the ballast dims in the opposite direction to previously
 - The first dimming direction is dimming down

Correction of out of sequence operation:

- Switch the mains supply off and on, or...
- Long push (until all lamps are on), then a short push (all lamps off), then switch on

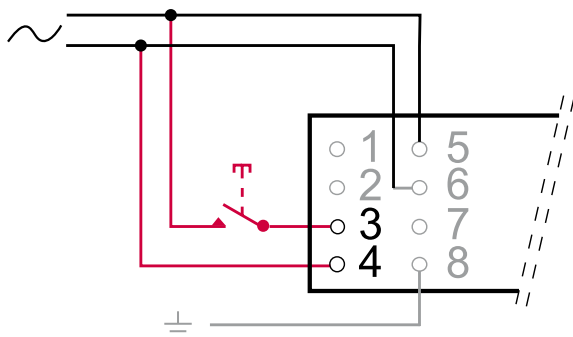
Compatibility:

Some ballasts manufacturers have functionality similar to Helvar Switch-Control. These methods are NOT COMPATIBLE with each other.

Connection

- To the DALI input

A) 0-25m



B) 25-200m

