

# zencontrol

# Smart luminaires



# To make buildings smarter, the luminaire needs to be smarter

## What does this mean?

### A fitting needs to

- know if people are around (PIR)
- know the external light levels (LUX)
- know how much power it uses (Meter)
- intercommunicate (DALI / Wi-Fi / Zigbee etc)
- be energy efficient, in operation and standby
- DIM
- Support upgrade to emergency
- be able to change colour temperature (circadian rhythm)



## Benefits

- ✓ No requirement for standalone PIRs / LUX sensors
- ✓ Increased data occupancy / lux
- ✓ Better energy savings / better detection
- ✓ No requirement for current transformers on circuits.
- ✓ Increased power data
- ✓ No requirement for standalone emergency lights
- ✓ Less installation costs
- ✓ No fit off of individual sensors / cts / standalone emergencies etc.



## Problem

- × This type of product does not exist
- × To achieve a smart luminaire today is almost impossible
- × DALI current limitations restrict combined fittings to < 10 per line
- × DALI current draw from each component adds up fast
- × Cost prohibitive to achieve (can buy each part, but max 10 units / line)
- × To achieve this task cost a lot of R&D and not many people have the will
- × POE solutions will offer similar solutions but are years away, cost \$\$\$ and are not compatible (also short comings).

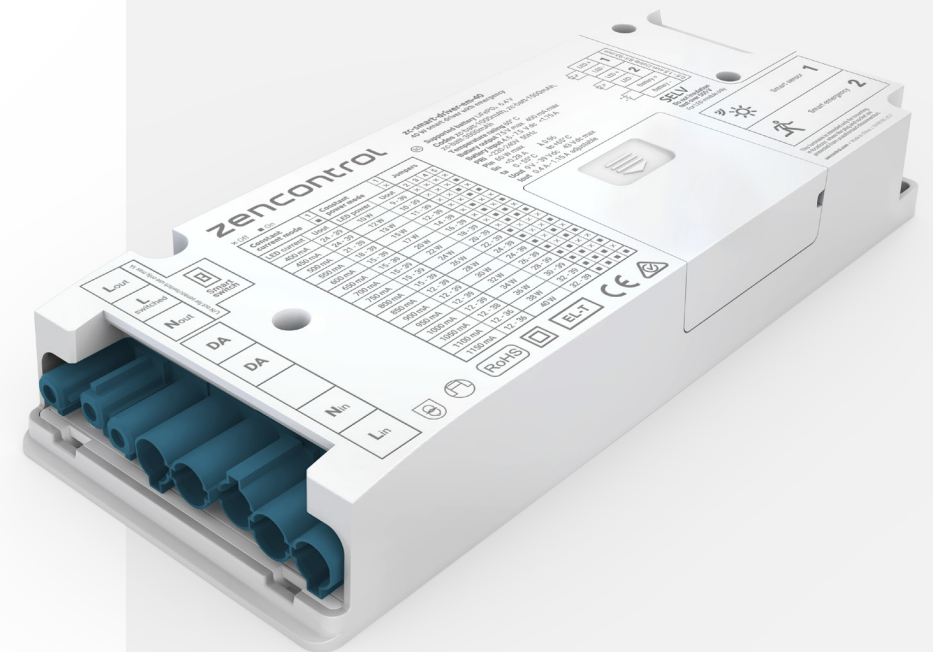


# zencontrol

The smart luminaire

The zencontrol smart driver (zc-driver) is an LED driver for connected luminaires, designed to make the most out of leading technologies in control, automation and connectivity

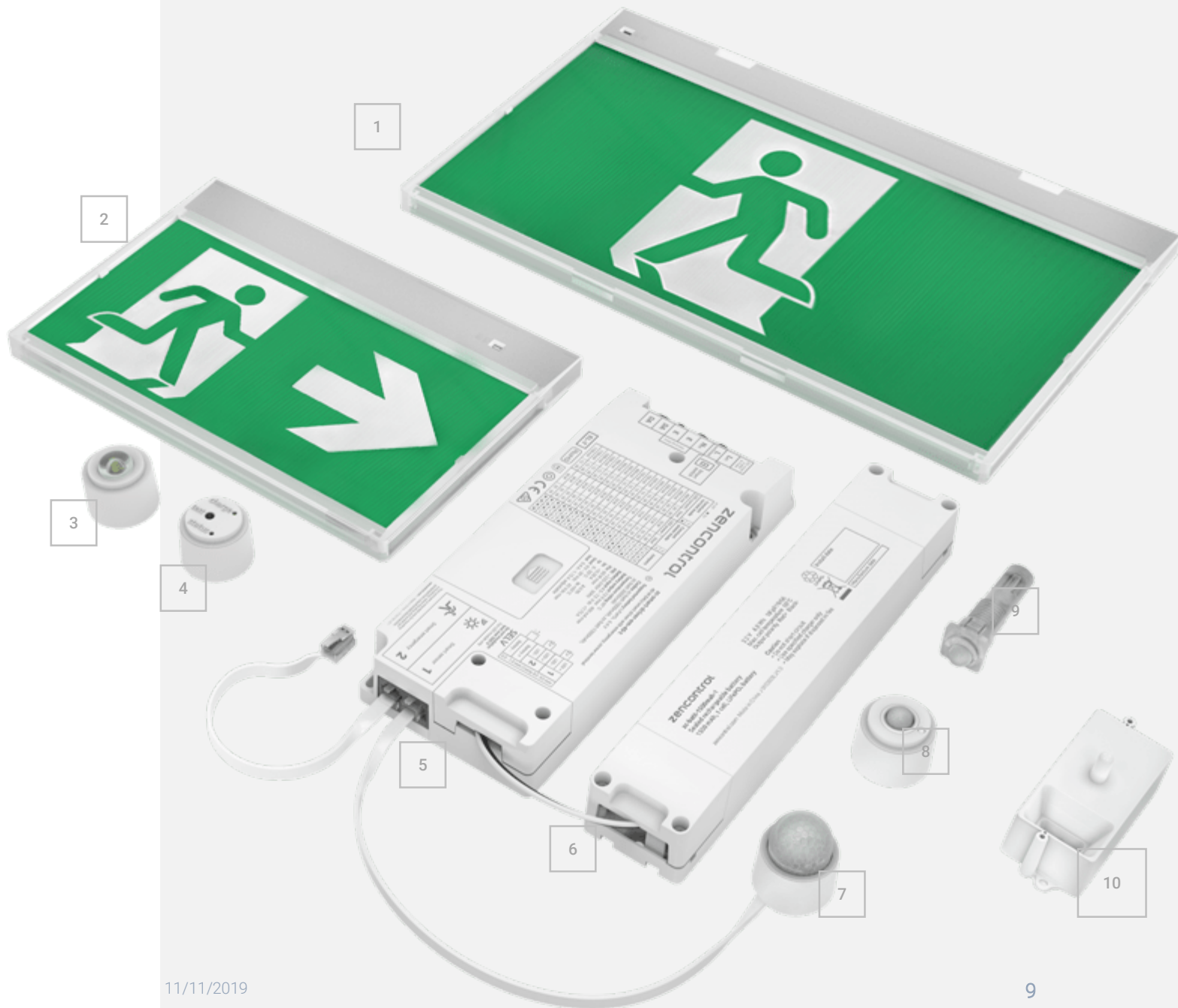
<b>Operating voltage</b>	~ 220 - 240 V 50 Hz
<b>Power factor</b>	2 > 0.96
<b>Operating temp.</b>	0 to 45°C
<b>Output</b>	Power 40 W
	Voltage 9 - 39 V dc
	Current 0 - 1.2 A
	LED channels 2
<b>Battery</b>	LiFePO4 with support for NiCd and NiMh





## Pluggable options

- 1** Smart exit 300x150 mm
- 2** Smart exit 200x100 mm
- 3** Emergency smart spot
- 4** Emergency test switch
- 5** Smart Emergency driver
- 6** Emergency battery
- 7** 8 m PIR and lux sensor
- 8** 5 m PIR and lux sensor
- 9** 5 m Nano PIR and lux sensor
- 10** Microwave and lux sensor

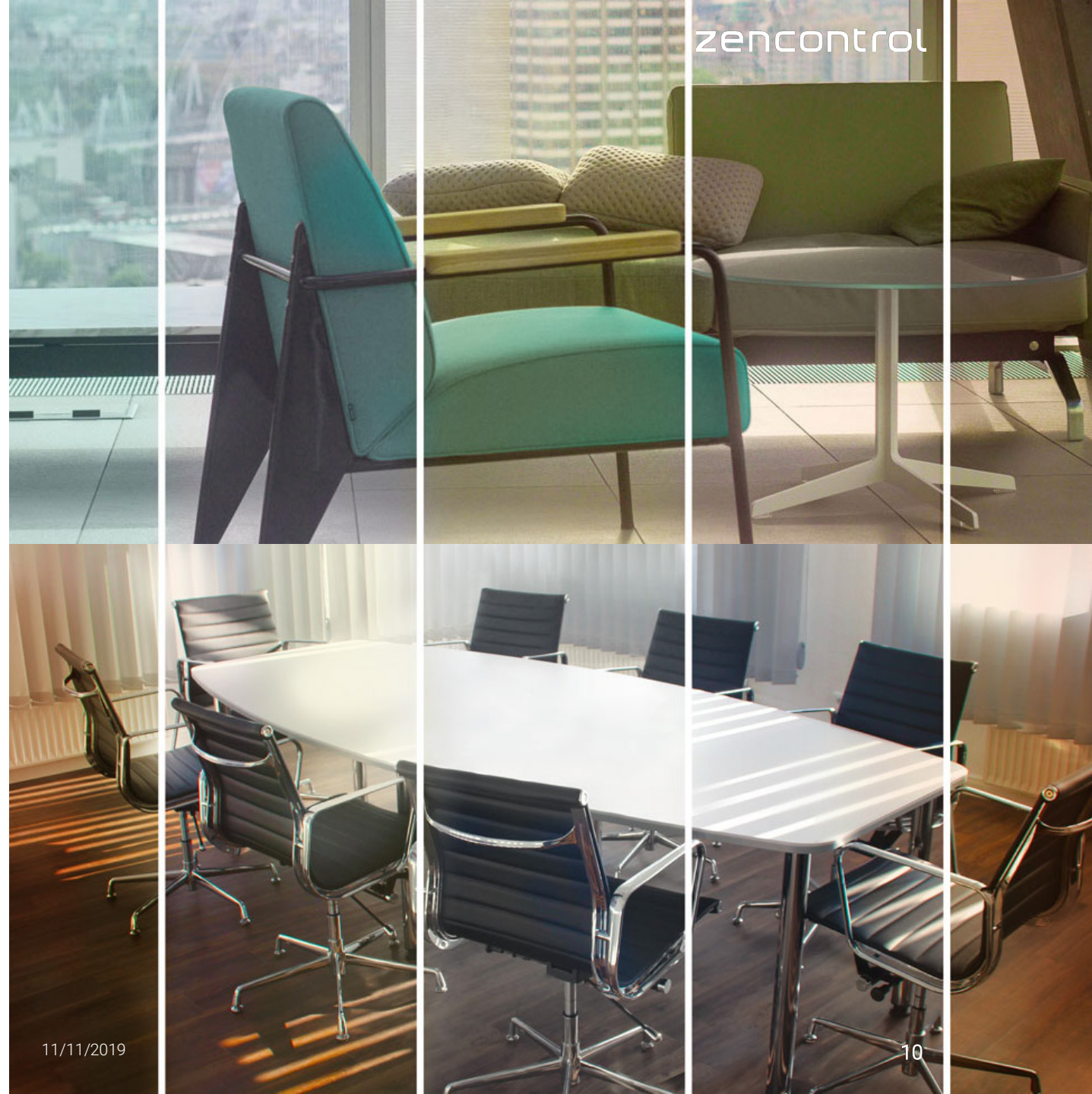


## Dual channel output

zc-drivers offer dual channel output providing enhanced capability in several applications.

- Tuneable white
- Correlated Colour Temperature (CCT)
- Long life fittings

## Dual luminaire



## Plug in emergency

- 1 zencontrol driver
- 2 Emergency battery
- 3 Emergency test switch
- 4 Emergency spot
- 5 Emergency slimblade exits

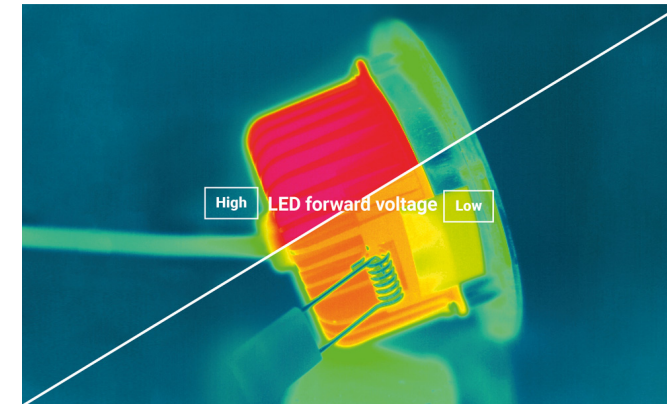


# Power or current

Jumpers				Constant current mode			Constant power mode		
a	b	c	d	LED current	V min.	V max.	Power	V min.	V max.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	400	24	39	10.1	9	39
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	450	24	39	11.25	10	39
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	500	21	39	12.5	10	39
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	550	18	39	13.75	11	39
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	600	15	39	15.0	12	39
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	650	15	39	16.25	13	39
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	700	15	39	17.5	14	39
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	750	15	39	20.0	16	39
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	800	15	39	22.5	19	39
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	850	12	39	25.0	21	39
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	900	12	39	27.5	22	39
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	950	12	39	30.0	24	39
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1000	12	39	32.5	25	39
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1050	12	38	35.0	28	39
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1100	9	36	37.5	30	39
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1150	9	35	40.0	32	39

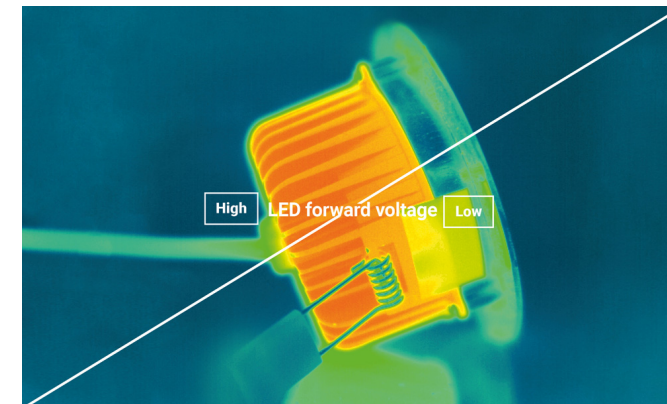
## Constant current mode

Thermal output increases with increased forward voltage



## Constant power mode

Same thermal output regardless of LED forward voltage



# IEC62386 edition 2

The zc-driver has been built for compliance with with IEC62386 and IEC62386 edition 2.

## The standards

IEC 62386	Description
Part 101 ed 2	System components
Part 102 ed 2	Control gear
Part 103 ed 1	Control devices
Part 202	Self-contained emergency lighting (device type 1)
Part 207	LED modules (device type 6)
Part 209	Colour change
Part 216	Load referencing
Part 217	Thermal gear information
Part 218	Dimming curve selection
Part 219	Power measurement
Part 220	Emergency DC
Part 301	Particular requirements – Input devices – Push buttons
Part 302	Particular requirements – Input devices – Absolute input devices
Part 303	Particular requirements – Input devices – Occupancy sensor
Part 304	Particular requirements – Input devices – Light sensor
Part 305	Colour sensor (upgradeable)



## Flexible installation

With two wiring options the driver is suitable for both field mount and inbuilt installation without compromise.

- 1 Large cage clamp screw terminals with inbuilt earth termination
- 2 Field mounting using Wieland GST18I5 compatible plugs, connecting the driver to any soft wiring system

