



# INTERLIGHT LED DRIVER DATASHEET

IL-DT29 & IL-DT48

## Product description

- Reliable, Class II, SELV according EN 61347
- Independent ECG and with push-fit strain-relief.
- $\pm 5\%$  output current accuracy (under maximum load)
- Permissible AC cable 0.5-1.5mm<sup>2</sup> wire gauge, 3.5~8mm PVC jacket diameter
- Flicker Free (less than 3% flicker percentage)
- Built-in active PFC and passive NTC
- Protection for output open load, short circuits, over voltage and over temperature
- Grow wire tested 650° for 30S and 850° for 5S
- 90°C Maximum case operation temperature (tc-point <sup>1</sup>)
- Operating temperature <sup>1</sup>: -20°C ~ +45°C, the humidity: 20% ~ 85%
- Over 60,000 hrs nominal lifespan at tc=60°C
- Five-year factory guarantee and lifetime technical support <sup>1</sup>

<sup>1</sup> Detailed data please refer to the "PARAMETERS" table.

## Features & Benefits

### Flexibility & Optimized Inventory

Two models cover wattages from 5W to 50W

- Wattage selectable by 3xDIP switches.
- Push-fit secondary terminals for LED module wires

### Human Centric Design

- Easy & Quick connection with push-fit terminals and clip-on end cap for strain relief
- Large wiring space

### Housing Properties

- Casing: polycarbonate, white
- Type of protection IP20

### Typical applications

- For spot light and downlight in retail and hospitality applications
- For panel light and area light in office and education application

## General Guidelines





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## Parameters

MODEL		IL-DT29	IL-DT48	
Output	Output voltage	14-42V	14-42V	
	Rated current	250-600mA (preselected 250mA)	650-1100mA (preselected 650mA)	
	Maximum power	25.2W	46.2W	
	Current tolerance	±5%	±5%	
	Dimming Range	1.5%-100%	1.5%-100%	
	Ripple voltage <sup>2</sup>	100Vp-p	180mVp-p	
	Ripple current	150mA <sub>p-p</sub>	220mA <sub>p-p</sub>	
	Line regulation	±1%	±1%	
	Load regulation	±3%	±3%	
	Flicker percentage <sup>3</sup>	<3%	<3%	
	Starting time	<500mS	<500mS	
	Turn off time	<2.0S	<2.0S	
Noise <sup>4</sup>	<22dB	<22dB		
1Input	Voltage	220-240V	220-240V	
	Frequency	Rated:50-60Hz, 0Hz; Range:47-63Hz, 0Hz;		
	Power factor	≥0.9; (Rated voltage input, rated current output conditions)		
	I-THD <sup>5</sup>	≤15%	<15%	
	Efficiency <sup>6</sup>	≥84%	≥86%	
	AC current	180mA max.	300mA max.	
	Inrush current <sup>7</sup>	30A	35A	
	Inrush current time	35uS	50uS	
	Leakage current	<1mA	<1mA	
	ON/OFF switches cycle	>100,000	>100,000	
Standby power	<0.5W	<0.5W		
Protection	Over current	Constant current limiting, recovers automatically after fault condition is removed		
	Over voltage	Shut down output voltage, with auto-recovery or re-power on to recovery		
	Over temperature	Shut down output voltage, recovers automatically after temperature goes down		
	Short circuit	Constant current limiting, recovers automatically after fault condition is removed		
Safety & EMC	Safety standards	EN61347-2-13; Design refer to TUV EN60950-1, TUV EN61347-1		
	Withstand voltage	I/P-O/P:3KVac	I/P-FG:1.5KVac O/P-FG: 500Vdc	
	Isolation resistance	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500Vdc/25°C/75%RH		
	EMC emission <sup>8</sup>	EN55015B, EN55022 Class B, EN61000-3-2, EN61000-3-3		
	EMC immunity	EN61000-4-2, EN61547, EN55024, EN-61000-4-5 Surge immunity Line-Earth: 2KV, L Line- N Line:1KV;		
Environment	Ambient temperature range <sup>9</sup>	-20°C ~ +45°C	-20°C ~ +45°C	
	Max. case temperature(tc) <sup>10</sup>	90°C	90°C	
	Relative humidity range	20% ~ 85%RH	20% ~ 85%RH	
	Storage temperature range	-40°C ~ +80°C	-40°C ~ +80°C	
max. No. of PSUS(Driver supply unit) on miniature circuit	MCB TYPE A	10A	27pcs @ full load	16pcs @ full load
		16A	45pcs @ full load	26pcs @ full load
		20A	55pcs @ full load	34pcs @ full load
	MCB	10A	30pcs @ full load	18pcs @ full load



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## Parameters

breaker(MCB)	TYPE B	16A	48pcs @ full load	28pcs @ full load
		20A	72pcs @ full load	42pcs @ full load
	MCB TYPE C	10A	35pcs @ full load	21pcs @ full load
		16A	55pcs @ full load	34pcs @ full load
		20A	56pcs @ full load	45pcs @ full load
Others	Lifetime(hrs)@tc=60°C		>70,000H	>60,000H
	MTBF [MIL-HDBK-217F(ta=25°C)]		492K Hrs min	502.8K Hrs min
	Glow wire test		850°C for 5S; 650°C for 30S	850°C for 5S; 650°C for 30S
	Dimension L x W x H		125 x 76 x 30mm	125 x 76 x 30mm
	Warranty years		5 years	5 years
(*If demand other output voltage and output current, contact your sales consultant or contact us: <a href="mailto:koopmaninterlight.nl">koopmaninterlight.nl</a> )				

“2” Ripple voltage is measured at 20MHz of bandwidth by using a 12” twisted pair-wire terminated with a 100nF & 47uF parallel capacitor.

“3” The flicker for frequencies of 200 Hz or below, input voltage 230Vac , at 100% output current level and 20% output current level with dimmer attached, output current ripple is defined as  $[(I_{max} - I_{min}) / (I_{max} + I_{min})] * 100\%$ , (CEC-400-2016-018-FS, Title 24 part 6 JA8).

“4” The noise of LED driver is defined as test data when driver tested in noise room with 50~60dB environment, and been hang in 1ft (305mm) inside chamber.

“5” Rated voltage input, rated output current, maximum output current.

“6” The typical efficiency is test data of output current at input @230Vac with 36V output voltage, maximum output current.

“7” The inrush current is test data of 230Vac input, cold start, measured at input current peak.

“8” The driver is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC directive on the complete installation again.

“9” For other than independent use, higher ta of the control gear possible as long as highest allowed tc point temperature is not exceeded.

“10” The tc is defined as the highest permissible temperature which may occur on the outer surface of the power under normal operating conditions and at the rated voltage/current/power or the maximum of the rated voltage/current/power range, refer to “output power vs temperature” section.

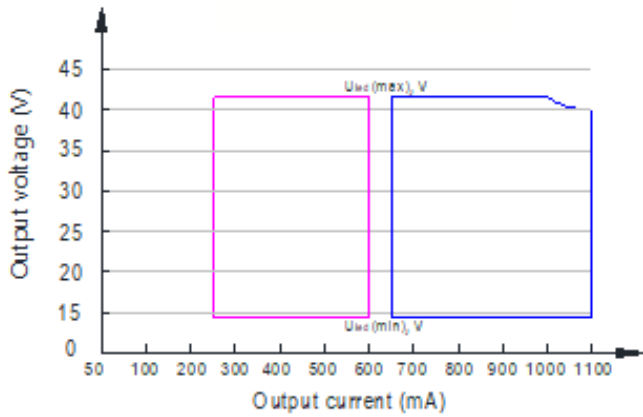


# INTERLIGHT LED DRIVER DATASHEET

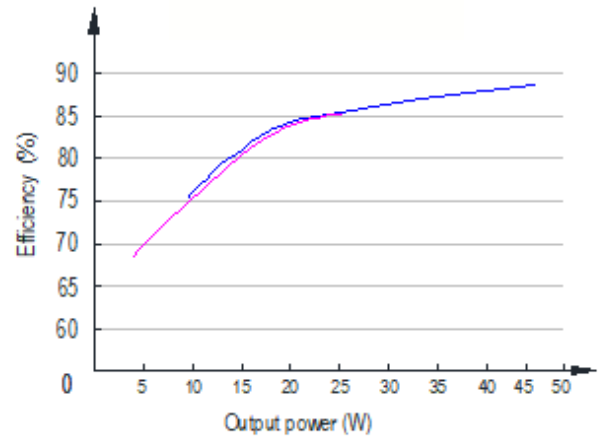
IL-DT29 & IL-DT48

## Driver performance curve

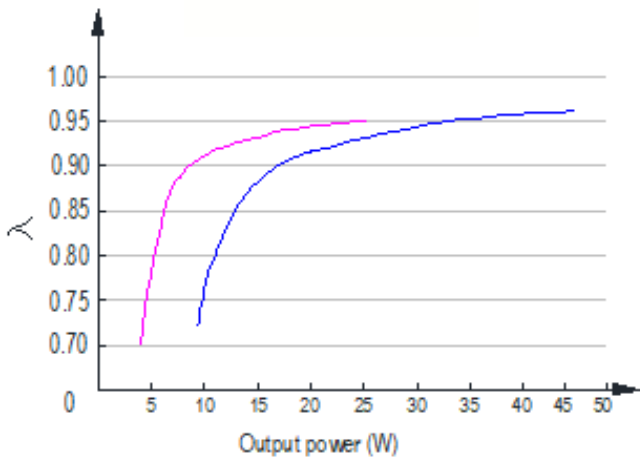
### Operating window



### Typical efficiency

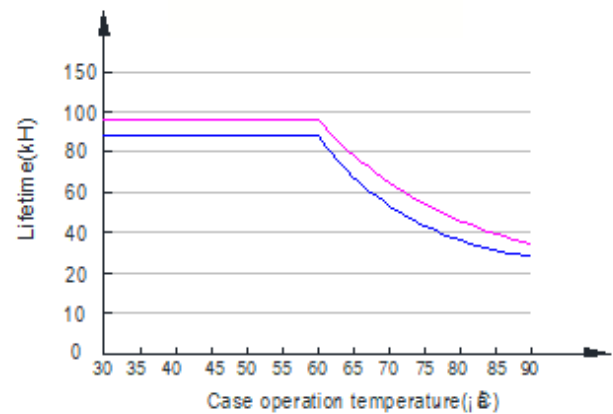


### Typical power factor

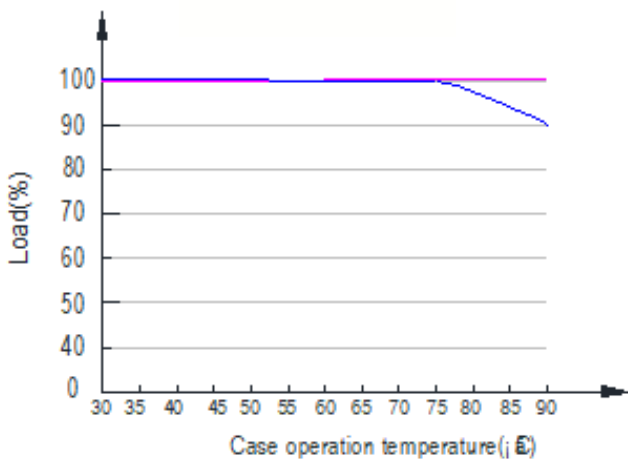


### Typical lifetime

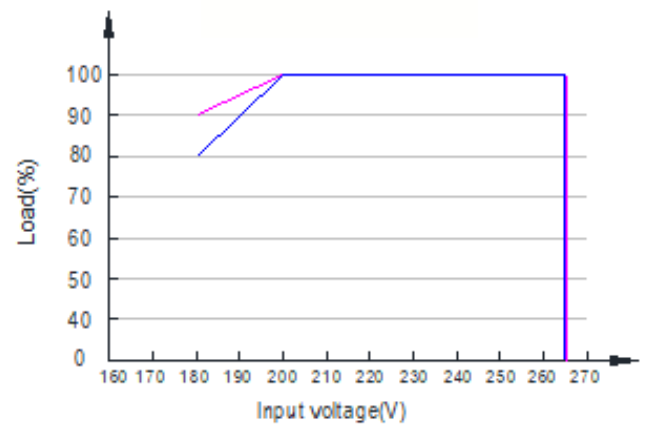
(Output 36V @ current max.)



### Typical case temperature (tc)



### Typical load output



IL-DT29 IL-DT48



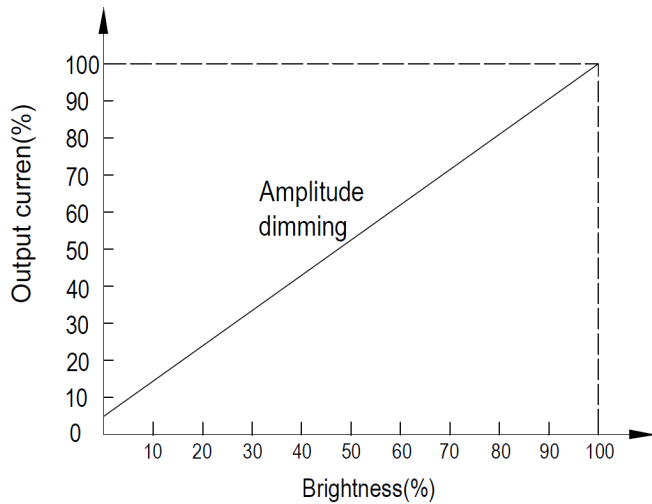
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## Dimming operation

### Dimming type

Amplitude Modulation, short as "AM", also known as Constant Current Reduction(CCR) or Analog Dimming. The AM dimming is completely invisible when camera recording but on the other hand a possible LED colour shifting could occur at low level dimming, together with a possible LED light instability due to physical differences between LEDs. INTERLIGHT® ENHANCED amplitude dimming technology is realized by adjusting the reference voltage supplied to the LED Module. It has the advantage of no surge current and high efficiency. DIM-TO-WARM LED modules are compatible with AM dimming.



## DIAGRAM&INSTALLATION MANUAL

### DIP Switch Table

INTERLIGHT® ECG is a multiple-stage constant current driver, selection of output current through DIP switch is exhibited below

**INTERLIGHT**

**Output Current and setting table**

Pin	Vo DC	Io DC	Pout	1	2	3	4
13W	14-42V	250mA	10.5W	-	-	-	-
16W		300mA	12.6W	ON	-	-	-
18W		350mA	14.7W	-	ON	-	-
20W		400mA	16.8W	ON	ON	-	-
22W		450mA	18.9W	-	-	ON	-
25W		500mA	21.0W	ON	-	ON	-
27W		550mA	23.1W	-	ON	ON	-
29W		600mA	25.2W	ON	ON	ON	-

Constant Current LED Driver  
Wireless Control by **INGY BLE**  
MODEL: IL-DT29  
INPUT: 220-240VAC 50/60Hz  
0.18A Max PF: 0.9@42V  
OUTPUT: 49V Max  
ta=45°C tc=90°C •tc

For LED modules use only  
FLICKER FREE  
MADE IN CHINA WWWW

INPUT: NG, AC-N, AC-L

OUTPUT: LED+, LED-

Dimensions: 0.75-1.5mm<sup>2</sup>, 8-10mm

CE, M, M, F, 110, EL, SELV

**INTERLIGHT**

**Output Current and setting table**

Pin	Vo DC	Io DC	Pout	1	2	3	4	
31W	14-42V	650mA	27.3W	-	-	-	-	
34W		700mA	29.4W	ON	-	-	-	
36W		750mA	31.5W	-	ON	-	-	
39W		800mA	33.6W	-	-	ON	-	
41W		850mA	35.7W	ON	-	ON	-	
43W		900mA	37.8W	-	ON	ON	-	
46W		950mA	39.9W	-	-	ON	-	
48W		1000mA	42.0W	ON	-	ON	ON	
46W		14-38V	1050mA	39.9W	-	ON	ON	ON
48W			1100mA	41.8W	ON	ON	ON	ON

CONSTANT CURRENT LED DRIVER  
Wireless Control by **INGY BLE**  
MODEL: IL-DT48  
INPUT: 220-240VAC 50/60Hz  
0.3A Max PF: 0.9@Pout=22W  
OUTPUT: 49V Max  
ta=45°C tc=90°C •tc

FLICKER FREE  
For LED modules use only  
MADE IN CHINA

INPUT: NG, AC-N, AC-L

OUTPUT: LED+, LED-

Dimensions: 0.75-1.5mm<sup>2</sup>, 8-10mm

CE, M, M, F, 110, EL, SELV

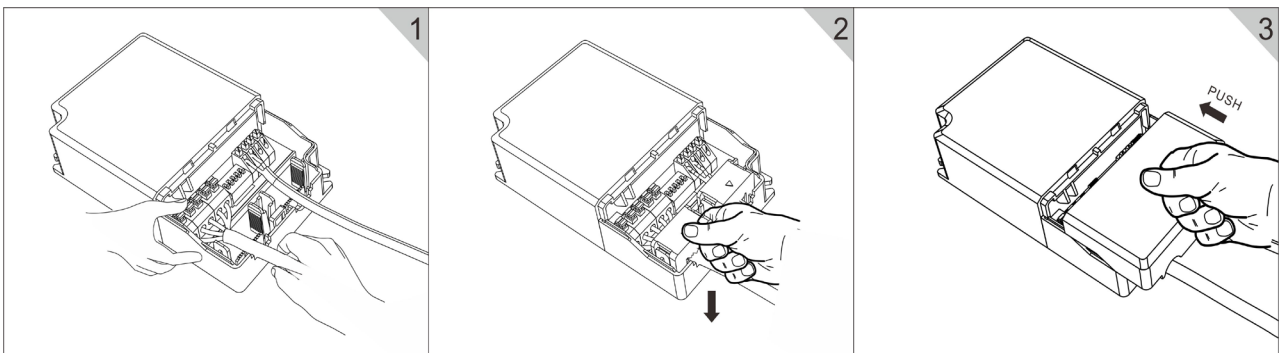


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## Wiring guidelines

- All connections must be kept as short as possible to ensure good EMI behavior.
- Mains leads should be kept apart from LED Driver and other leads (ideally 10 – 30 cm distance).
- Incorrect wiring can damage LED modules.
- The wiring must be protected against short circuits to earth (sharp edged metal parts, metal cable clips, louver, etc.)



## Release of the wiring

Press down the “push button” and remove the cable from front.

## Miniature circuit breaker application

Total continuous current of the drivers and installation environment must always be considered and taken into calculations when installing drivers behind miniature circuit breaker(MCB).

Quantity of drivers(IL-DT48) per miniature circuit breaker 16 A Type C

Based on inrush current $I_{peak}$	Typ. peak inrush current $I_{peak}$	1/2 value time, $\Delta t$	Calculated energy, $I_{peak}^2 \Delta t$
34pcs	35A	85 $\mu$ S	0.011A <sup>2</sup> s

**Example calculation of total drivers amount limited by continuous current:**  $n(I_{cont}) = (16 \text{ A } (I_{nom, ta}) / \text{"nominal mains current with full load"}) \times 0.65$ . This calculation is an example according to recommended precautions due to multiple adjacent circuit breakers (> 9 MCBs) and installation environment ( $t_a=30^\circ\text{C}$ ); variables may vary according to the use case. Both inrush current and continuous current calculations are based on "Schneider Acti9" series circuit breakers. More specific information in "Schneider Acti9" series circuit breaker documentation.

NOTE ! Type B or C MCB's are strongly recommended to use with the LED driver.

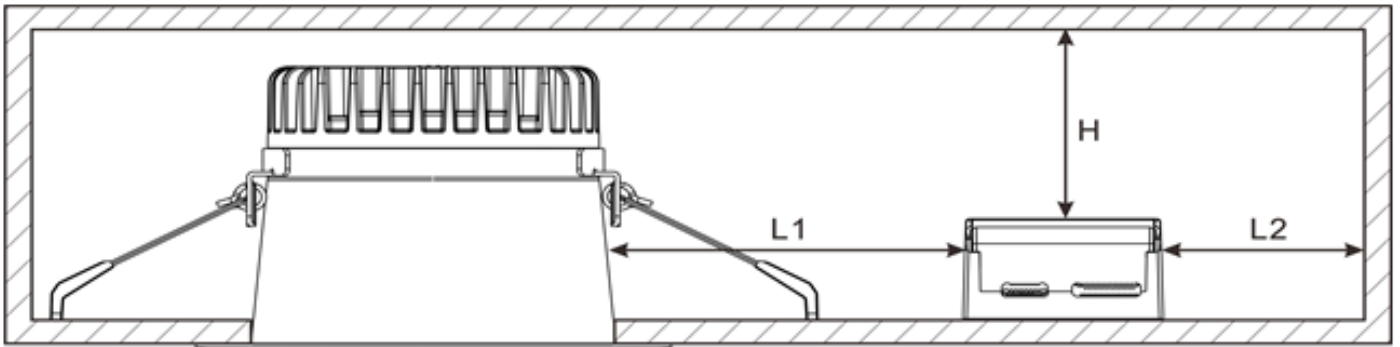


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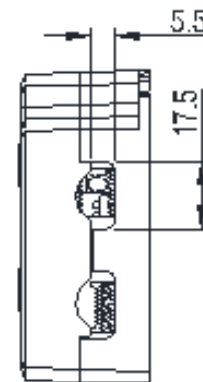
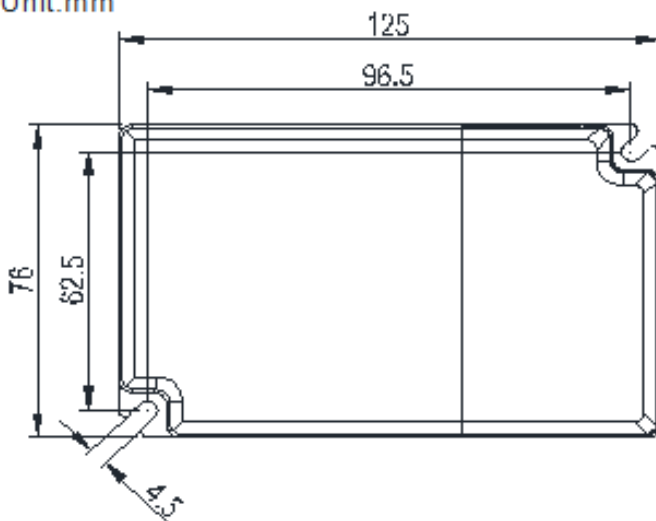
## Fixing conditions

Dry, acid-free, oil-free, fat-free. It is not allowed to exceed the maximum ambient temperature (ta) stated on the device. Minimum distances stated below are recommendations and depend on the actual luminaire. Is not suitable for fixing in corner.



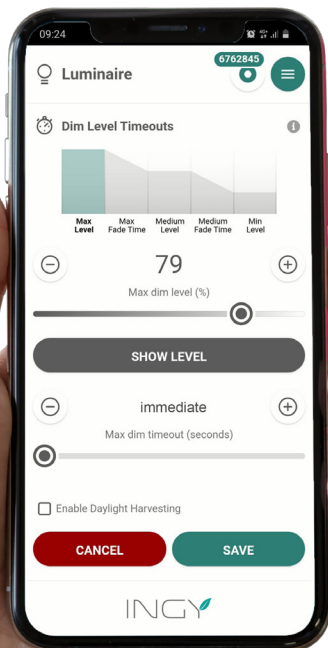
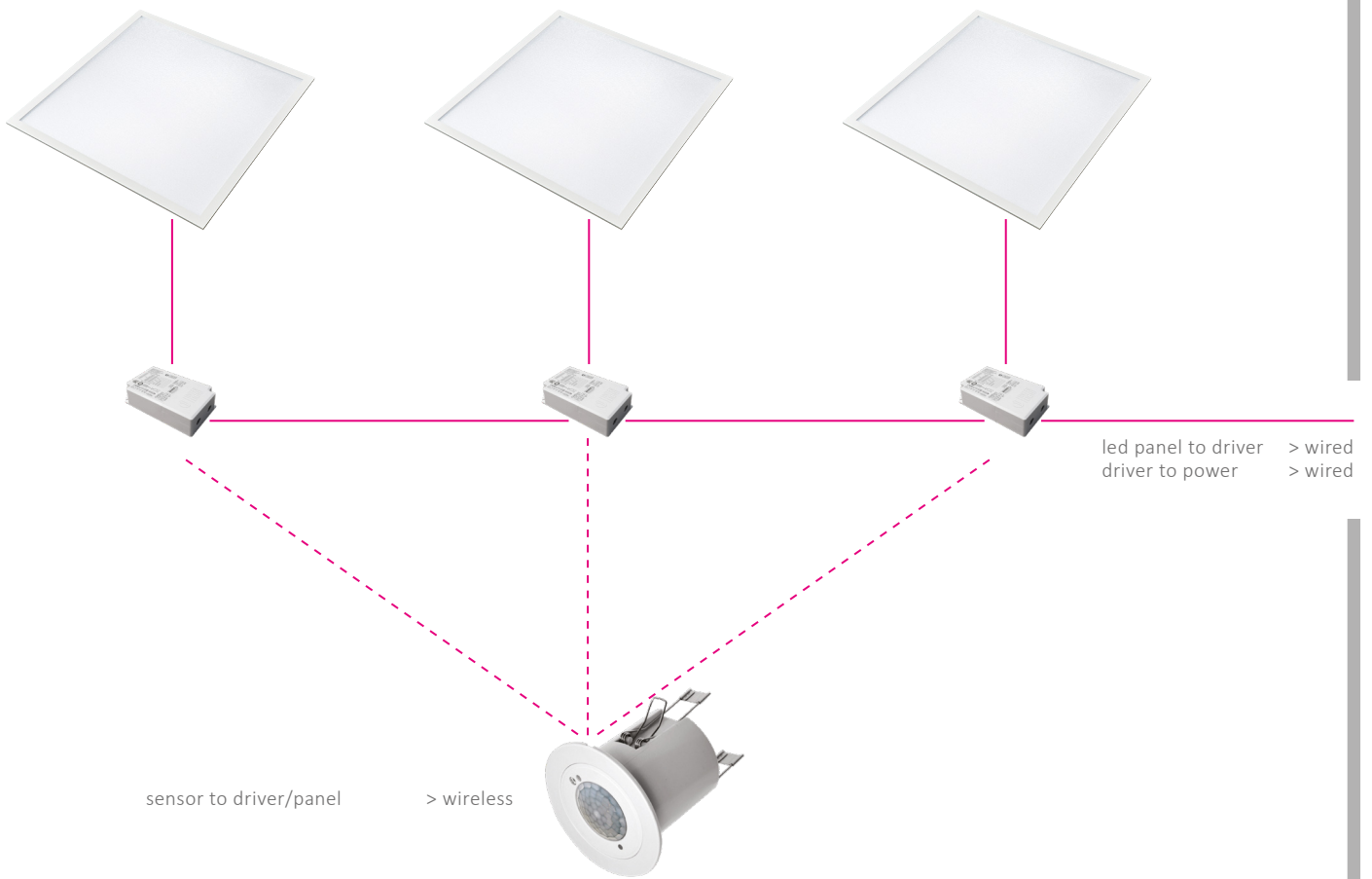
Model \ Size	L1(min.)	L2(min.)	H(min.)
IL-DT29	60mm	20mm	20mm
IL-DT48	100mm	20mm	30mm

Unit:mm



Part Number	Dimension	Gross Weight	Net Weight	Qty/Carton
IL-DT29, IL-DT48	455 x 400 x 180mm	11.5kg	9.5kg	50pcs

# THINGQ



app to sensor > Thingq App





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