Constant Voltage LED Driver

Constant Voltage Driver

Model：LV30W24CG2 1-10
LV60W24CG2 1-10

Model	Rated Input Voltage	Input Power	Input Current	PF	Output Power Range	Output Voltage	Output Current	Efficiency (typ.)	Cementing product
LV30W24CG2 1-10	220-240VAC	≤38W	≤0.19A	≥0.95	0-30W	24V	0-1.25A	86%	N
LV60W24CG2 1-10		≤72W	≤0.35A		0-60W		0-2.5A	87%	Y

*** Test result @230V, 50Hz, Full Load.**

1. Parameters

category	Item	Technical Norm				
Features	Output Type	Constant Voltage				
	Dimmable Type	3 in 1: 1-10VDC, PWM signal, Resistance				
	Output Features	Isolation SELV				
	IP Grade	IP20				
	Insulation Class	Class II				
Input	Rated Input Voltage	220-240VAC				
	Range of AC Input Voltage	176-264VAC				
	Range of DC Input Voltage	175-280VDC				
	Frequency	Rate:50/60Hz, Range:47~63Hz				
	Power Factor	≥0.95, 220-240VAC, Rated Load, see graphs				
	THD	≤10%	230VAC,Rated load, see graphs			
	Standby Power Consumption	≤0.5W, @230VAC,Dim to OFF				
	Inrush Current	Model	Ipeak	Ipeak (typ.)	Duration time	240Vac/50Hz, 90-degree phase, full load, cold start-up, duration time measure from 50%Ipk to 50%Ipk
		30W	<30A	22A	310us	
		60W	<30A	26A	220us	

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Output	Output Voltage	24VDC+5%			
	No load Voltage	24VDC+5%			
	Output Voltage Ripple	30W			<240mVPK-PK (0.5%)
		60W			<240mVPK-PK (0.5%)
	Line Regulation	±1%			
	Load Regulation	±2%			
	Overshoot	<105%Vo			
	Start-up Time	≤0.5S (220-240VAC)			
	Hold-up time & Turn off time (Typical)	Model	Hold-up time(mS)	Turn-off time(mS)	230VAC, LED Rated Load, Hold-up time measure from AC input turn-off to output voltage drop to 90%, turn-off time measure from AC input turn-off to output voltage drop to 10%
		30W	30	72.3	
		60W	22.8	62.8	
	Efficiency	30W	≥85%	86% typ.	230VAC, Rated Load, at output terminals, see graphs
		60W	≥86%	87% typ.	
Protection	Short Circuit Protection	Auto Recovery			
	Over Current Protection	120%-180%Io, Auto Recovery			
	Over Voltage Protection	110%-150%Vo, Auto Recovery			
	Insulation voltage	I/P to O/P, 3KVac/5mA/1min			
	Insulation resistance	>100M ohm @ 500VDC			
	Leakage current	I/P to O/P < 250μA			
Control Method	1-10V(0-10V)dimming	0-10Vdc, Port source current 0.1mA typical			
	PWM dimming	PWM Signal dimming Duty: 0- 99%,0.25KHz-2KHz, Voltage amplitude:3-10V			
	Resistance dimming	0-100/N Kohm (N=driver quantity for synchronized dimming operation)			
	Output Dimming range	Output duty:1%-100%,1.38KHz, Dim-to-off			
Environment	Ta/Operation Temperature	-25….+45			
	Ts/Storage Temperature	-40….+85℃			
	Tc/Enclosure Temperature For Safety	30W		80℃	
		60W		90℃	
	Humidity	5% 85%RH			
	Atmosphere	86-108KPa			
Construction	Connection Method	Terminal			
	Cable Terminals	Input		1 terminal block	
		Output	30W/60W	1 terminal block	

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		Dimming	1terminals block	
	Installation	Independent		
	Input Wire Cross Section	0.75mm²-1.5 mm²		
	Output Wire Cross Section	30W	0.5mm²-1.5 mm²	
		60W	0.75mm²-1.5 mm²	
	Dimming Wire Cross Section	30W/60W	0.5mm²-1.5mm²	
	Output Cable Length	Max. 3M		
	Cable diameters range	Input	2.2-4mm or 9.5-10.5mm	
		Output & Dimming	2.2-4mm	
	Dimension	30W/60W	300*30*16mm (L*W*H)	
Standards	Certification	CE, ENEC, SAA		
	Safety Standards	EN61347-2-13:2014/A1:2017,EN62384:2006/A1:2009, EN61347-1:2015,AS61347.2.13:2018, AS/NZS 61347.1:2016 Inc A1		
	EMC Standards	EN IEC 55015:2019,EN IEC 55015:2019/A11:2019 EN IEC 61000-3-2:2019,EN61547:2009, EN 61000-3-3:2013/A1:2019		
	Performance	EN62384		
	Surge	L-N:2KV		
Others	RoHS	2011/65/EU		
	MTBF	≥250KHours,Ta=25℃(MIL-HDBK-217F)		
	Audible Noise	<28dB @ 10cm distance, 20dB background		
	Life Time(@Ta max)	30W	≥80K Hrs	@230VAC , full load, End of Life: Failure Rate<10%
		60W	≥60K Hrs	
	Warranty	5years		

Remark:

All Parameters, if not specified, are measured at 230VAC/50Hz and 25℃ ambient temperature.

LED Driver is a component of the luminaires, Luminaires and wire layout will affect the EMC, please check the EMC with end products again.

Output ripple should be measured at the output end which has with 0.1uF/50V ceramic capacitance and 47uF/50V Aluminum capacitance connected in parallel. Measured using oscilloscope with bandwidth limited to

20MHz.

2. Connected quantities of different current Breaker

TYPE	LV30W24CG2 1-10 Connected quantities of different current Breaker						Input Voltage	Inrush Current <25A	Time
	current（A）	10	13	16	20	25			
	Installation wire diameter	1.5mm²	2.5mm²	2.5mm²	4mm²	4mm²			
TYPE B		27	35	44	55	68	@230VAC	22	310us
TYPE C		44	57	70	87	109			
TYPE D		70	91	112	140	175			

TYPE	LV60W24CG2 1-10 Connected quantities of different current Breaker						Input Voltage	Inrush Current <30A	Time
	current（A）	10	13	16	20	25			
	Installation wire diameter	1.5mm²	2.5mm²	2.5mm²	4mm²	4mm²			
TYPE B		23	30	37	46	58	@230VAC	26	220us
TYPE C		37	48	59	74	92			
TYPE D		59	77	95	118	148			

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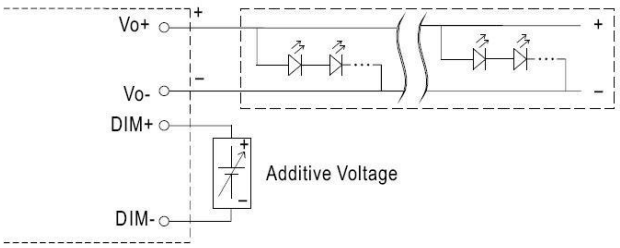
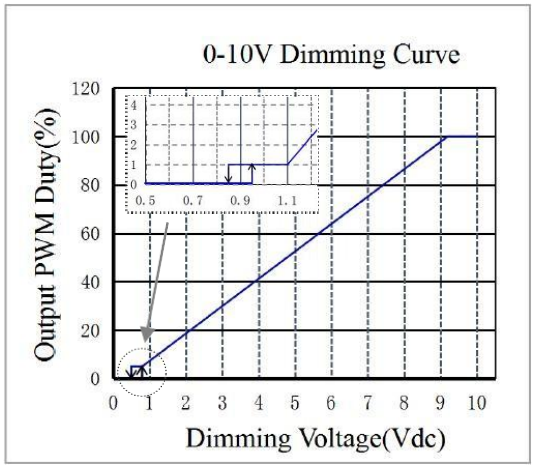
3. 3 in 1 Dimming Function

Output power can be adjusted by applying one of the three methodologies between DIM+ and DIM-:

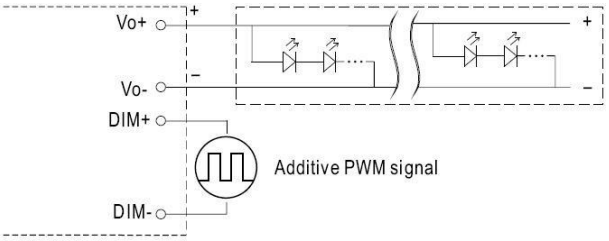
0 -10VDC, or PWM signal or resistance.

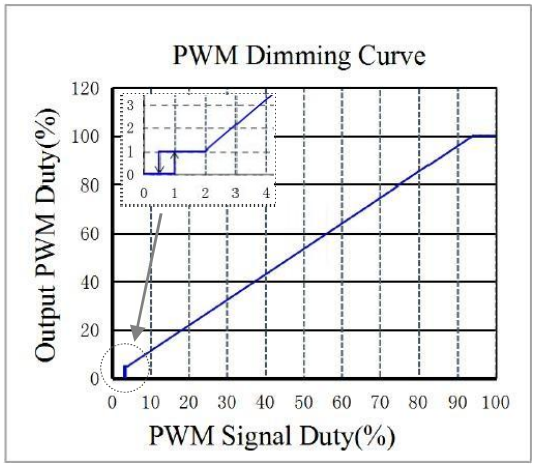
Applying additive 0 ~ 10VDC



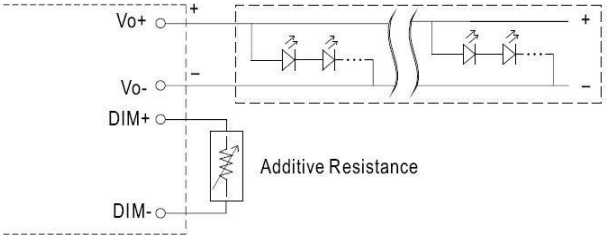


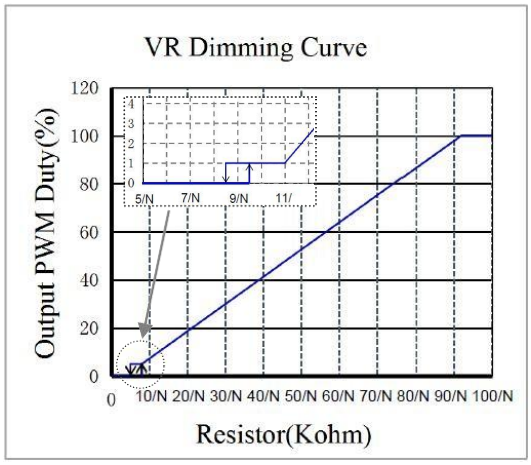
Applying additive PWM signal (Duty: 0- 99%,frequency range 0.25KHz ~ 2KHz,Voltage amplitude:3-10V)





Applying additive resistance





(N=driver quantity for synchronized dimming operation)

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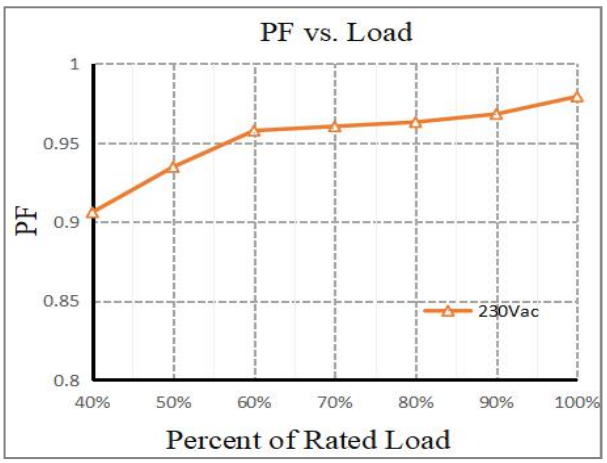
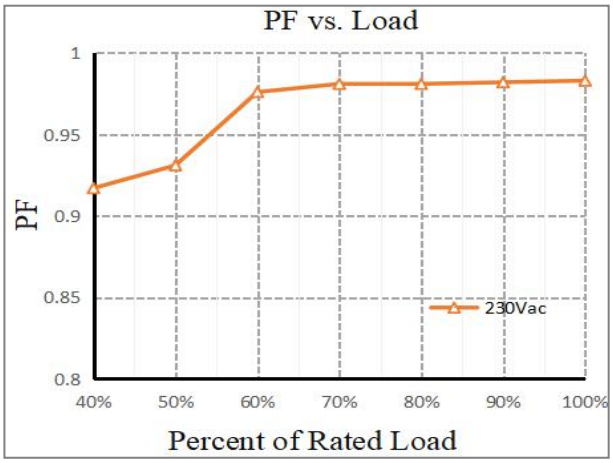
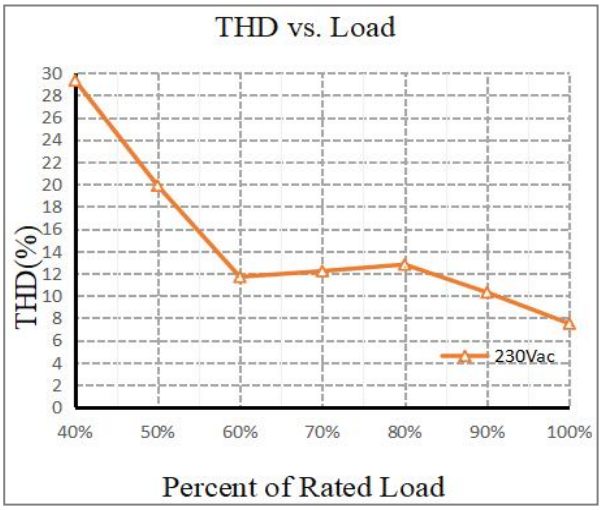
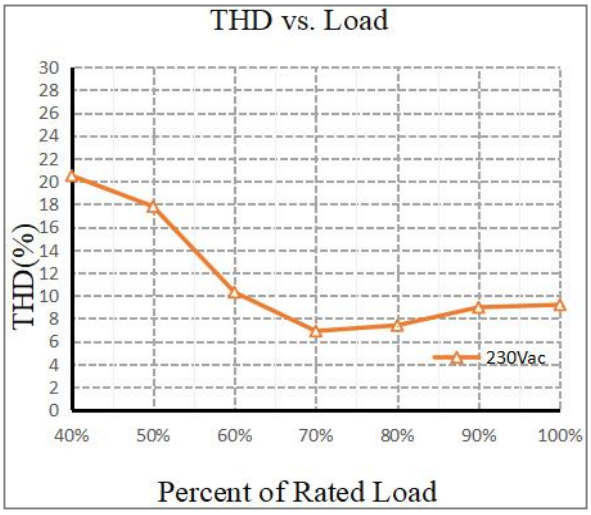
4. Graph

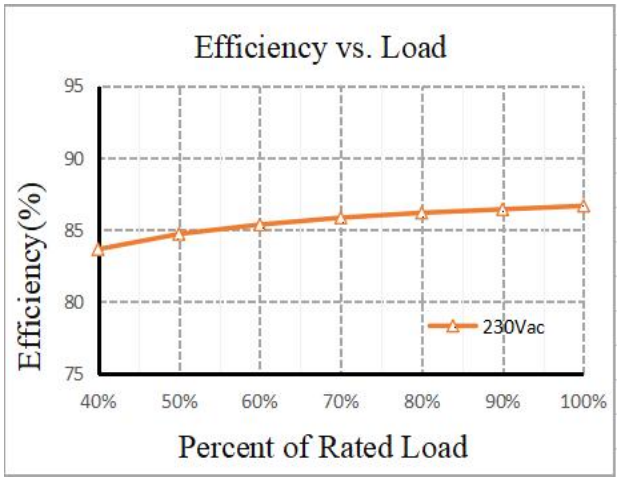
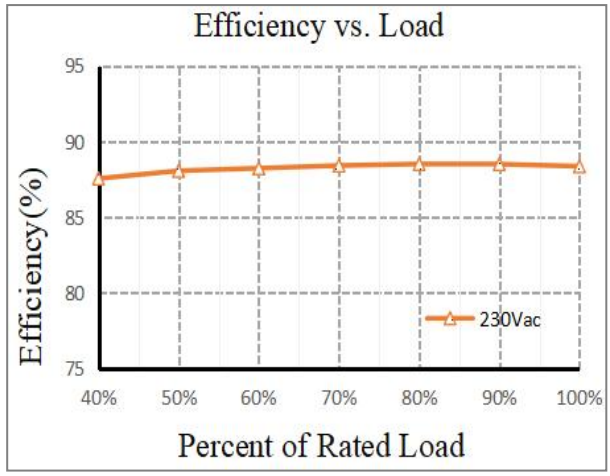
PF VS LOAD Curve

30W	60W
	

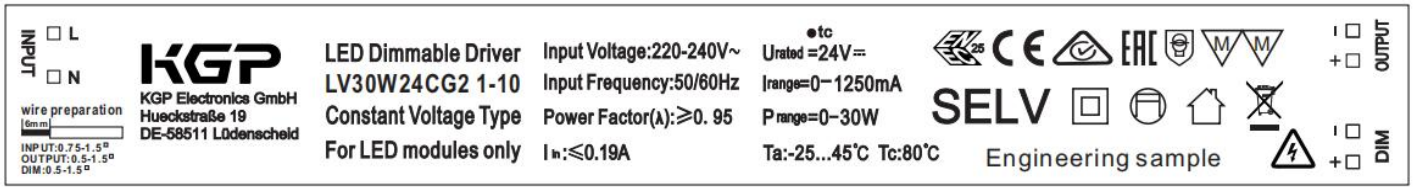
THD VS LOAD Curve

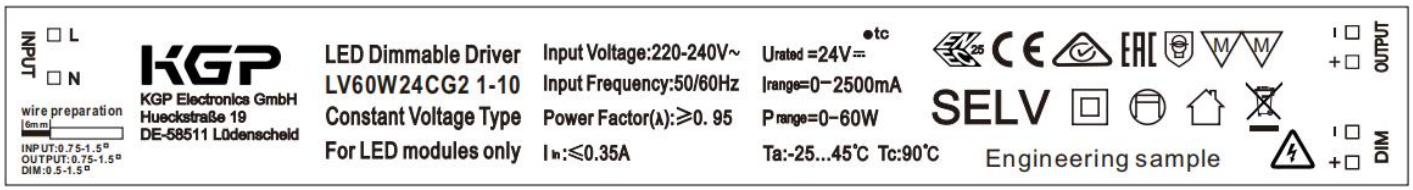
30W	60W
	

Efficiency VS LOAD Curve

30W	60W
	

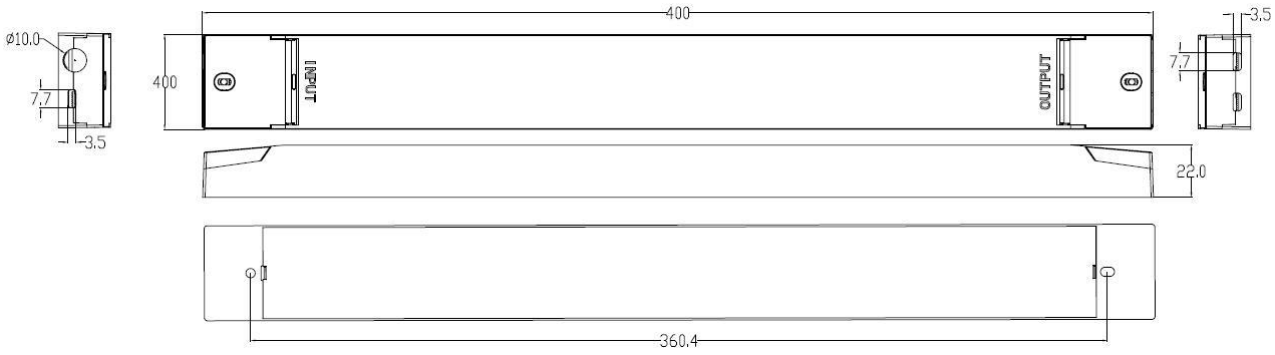
5. Label





6. Dimension （Unit：mm）

LV30W24CG2 1-10 & LV60W24CG2 1-10:



7. Packing information

Packing way	Model	Carton L*W*H(mm)	Pcs/Carton	Net weight/ Pcs(kg)	Net weight/ Carton(kg)	Gross weight / Carton(kg)
With white box and manual	LV30W24CG2 1-10	450*240*200	45	0.143	6.44	6.96
	LV60W24CG21-10		45	0.23	10.35	10.87
Without white box and manual	LV30W24CG2 1-10		75	0.125	9.38	10.08
	LV60W24CG2 1-10		75	0.21	15.75	16.45

8. Wiring instructions

- All connections must be kept as short as possible to ensure good EMI behaviour
- Mains leads should be kept apart from LED Driver and other leads (ideally 5 – 10 cm distance)
- Advice the maximum length of output wires is 3 m
- Secondary switching is not permitted（Except for constant voltage）
- Incorrect wiring can damage LED modules.
- The wiring must be protected against short circuits to earth (sharp edged metals parts, metal cable clips, louver, etc.)

9. REVISION HISTORY

DATE	REV.	REMARK
2023-03-30	V1.0	Initial release.

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