

Constant Voltage LED Driver



Constant Voltage Driver

Model: XSV Series



Model	Item Code	Rated Input Voltage	Input Power	Input Current	PF	Output Power Range	Output Voltage	Output Current	Efficiency (typ.)
XSV60W48 DALI	149381	220-240VAC	≤72W	≤0.4A	≥0.95	0-60W	48V	1.25A	88%
XSV100W48 DALI	148921		≤115W	≤0.6A		0-100W		2.10A	90%
XSV160W48 DALI	149021		≤180W	≤0.9A		0-160W		3.34A	92%
XSV240W48 DALI	149141		≤265W	≤1.5A		0-240W		5.00A	92%
XSV400W48 DALI	149281		≤435W	≤2.3A		0-400W		8.34A	93%

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

1.Parameters

category	Item	Technical Norm						
Features	Output Type	Constant Voltage						
	Dimming Type	DALI-2						
	Output Features	Isolation SELV						
	IP Grade	IP67						
	Installation	Independent						
	Insulation Class	Class I						
Input	Rated Input Voltage	220-240VAC						
	Range of AC Input Voltage	176-264VAC						
	Range of DC Input Voltage	175-280VDC (EMI not evaluated)						
	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	IP	IP (typ.)	Duration time	240Vac/50Hz, 90-degree phase, full load, cold start-up, duration time measure from 50%I _{pk} to 50%I _{pk}		
		60W	<30A	26A	220us			
		100W	<50A	45A	250us			
		160W	<60A	56A	250us			
		240W	<80A	76A	320us			
		400W	<100A	88A	430us			

Constant Voltage LED Driver

	Connected quantity of 16A Breaker	60W	16pcs,16A type B / 26pcs 16A type C		
		100W	10pcs,16A type B / 16pcs 16A type C		
		160W	8pcs,16A type B / 13pcs 16A type C		
		240W	6pcs,16A type B / 8pcs 16A type C		
		400W	4pcs,16A type B / 5pcs 16A type C		
Output	Output Voltage	48VDC±3%			
	Rated Load Range	60W	24-60W		
		100W	30-100W		
		160W	48-160W		
		240W	72-240W		
		400W	120-400W		
	Output Voltage Ripple	<480mV _{PK-PK} (0.5%)			
	Line Regulation	±1%			
	Load Regulation	±2%			
	Overshoot	<105%Vo			
	Start-up Time	0.6S(typ.) (220-240VAC)			
	Efficiency	60W	≥86%	88% typ.	230VAC, Rated Load, at output terminals, see graphs
		100W	≥90%	92% typ.	
		160W	≥90%	92% typ.	
240W		≥90%	92% typ.		
400W		≥91%	93% typ.		
Protection	Short Circuit Protection	Auto Recovery			
	Over Current Protection	120%-200%Io, Auto Recovery			
	Over Voltage Protection	120%-150%Vo, Auto Recovery			
	Over Temperature Protection	90<Tc<110℃, 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	PUSH dimming	PUSH dimming (Max. lead wire length: 20m, same port of DALI)			
	PUSH Dimming Synchronization	The power connected to the same PUSH switch can be synchronized by pressing and holding the PUSH switch for longer than 10S.			
	DALI function	DALI dimming (Max. lead wire length: 300m) logarithm or linear dimming curve selectable			
	Dimming range	DALI dimming: 1%-100%, (1KHz)			
Environment	Ta/Operation Temperature	-25....+50℃			
	Ts/Storage Temperature	-40....+85℃			
	Tc/Enclosure Temperature For Safety	60W/100W	75℃		
		160W	85℃		
		240W/400W	90℃		
	Humidity	5%....85%RH			
	Atmosphere	86-108KPa			

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Standards	Certification	CE	
	Safety Standards	EN61347-1:2015, EN61347-2-13:2014/A1:2017, EN62493:2015, AS61347.2.13:2018, AS/NZS 61347.1:2016 Inc A1	
	EMC Standards	EN55015:2013/A1:2015, EN61000-3-2:2014, EN61000-3-3:2013, EN61547:2009	
	Performance	EN62384; IEC 62386-101 Edition 2.0 2014-11; BS EN 62386-102:2014 ; BS EN 62386-207:2009	
	Surge	L-N:4KV, L/N-PE:6KV	
Others	RoHS	2011/65/EU	
	MTBF	≥250KHours, Ta=25℃ (MIL-HDBK-217F)	
	Audible Noise	<25dB @ 10cm distance, 20dB background	
	Life Time	30W/60W/100W/160W	≥100K Hrs 65 °C case temperature, refer to life vs. Tc curve
		240W/400W	≥100K Hrs 75 °C case temperature, refer to life vs. Tc curve
	Warranty	5years	
	Dimensions (L*W*H)	30W	235*30*21MM (body), 250*30*21MM (endcaps included)
		60W	275*30*21MM (body), 290*30*21MM (endcaps included)
		100W	305*30*21MM (body), 320*30*21MM (endcaps included)
		160W	335*30*21MM (body), 350*30*21MM (endcaps included)
		240W	385*30*21MM (body), 400*30*21MM (endcaps included)
		400W	380*55*22MM (body), 400*55*22MM (endcaps included)
	Wiring	Input	H05RN-F/3X1.0mm ² , Brown/Blue/(Yellow/Green)
		Output	H05RN-F/2X1.0mm ² , Red/Black
		DALI	H05RN-F/2X0.75mm ² , Purple/Gray
	Output Cable Length	Max. 1M	

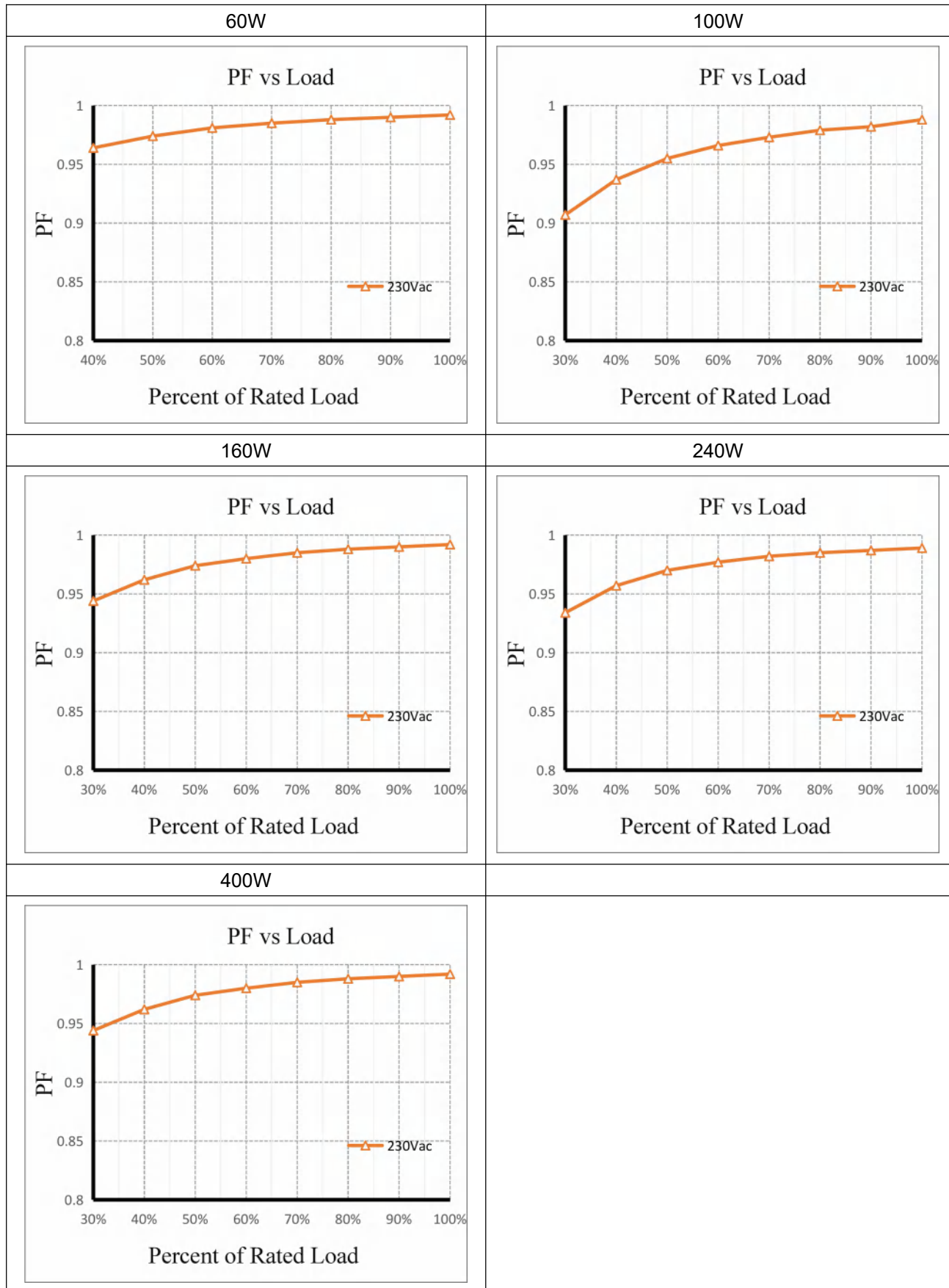
Remark:

1. All Parameters, if not specified, are measured at 230VAC/50Hz and 25℃ ambient temperature.
2. LED Driver is a component of the luminaires, Luminaires and wire layout will affect the EMC, please check the EMC with end products again.
3. Output ripple should be measured at the output end which has with 0.1uF/100V ceramic capacitance and 10uF/100V Aluminum capacitance connected in parallel. Measured using oscilloscope with bandwidth limited to 20MHz.
4. When connecting the DALI controller, need to reset the power supply.

Constant Voltage LED Driver

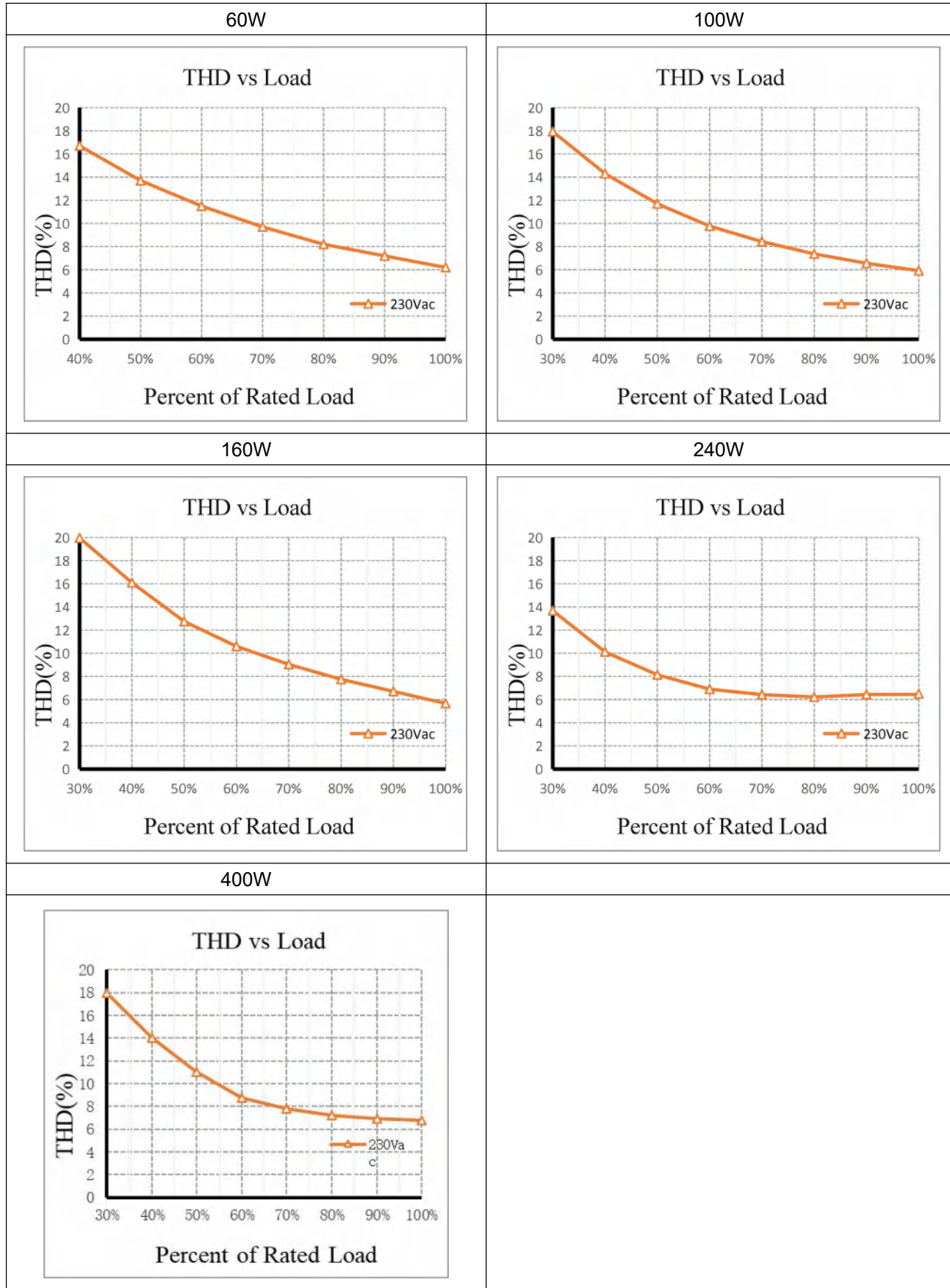
2.Graph

PF VS LOAD Curve



Constant Voltage LED Driver

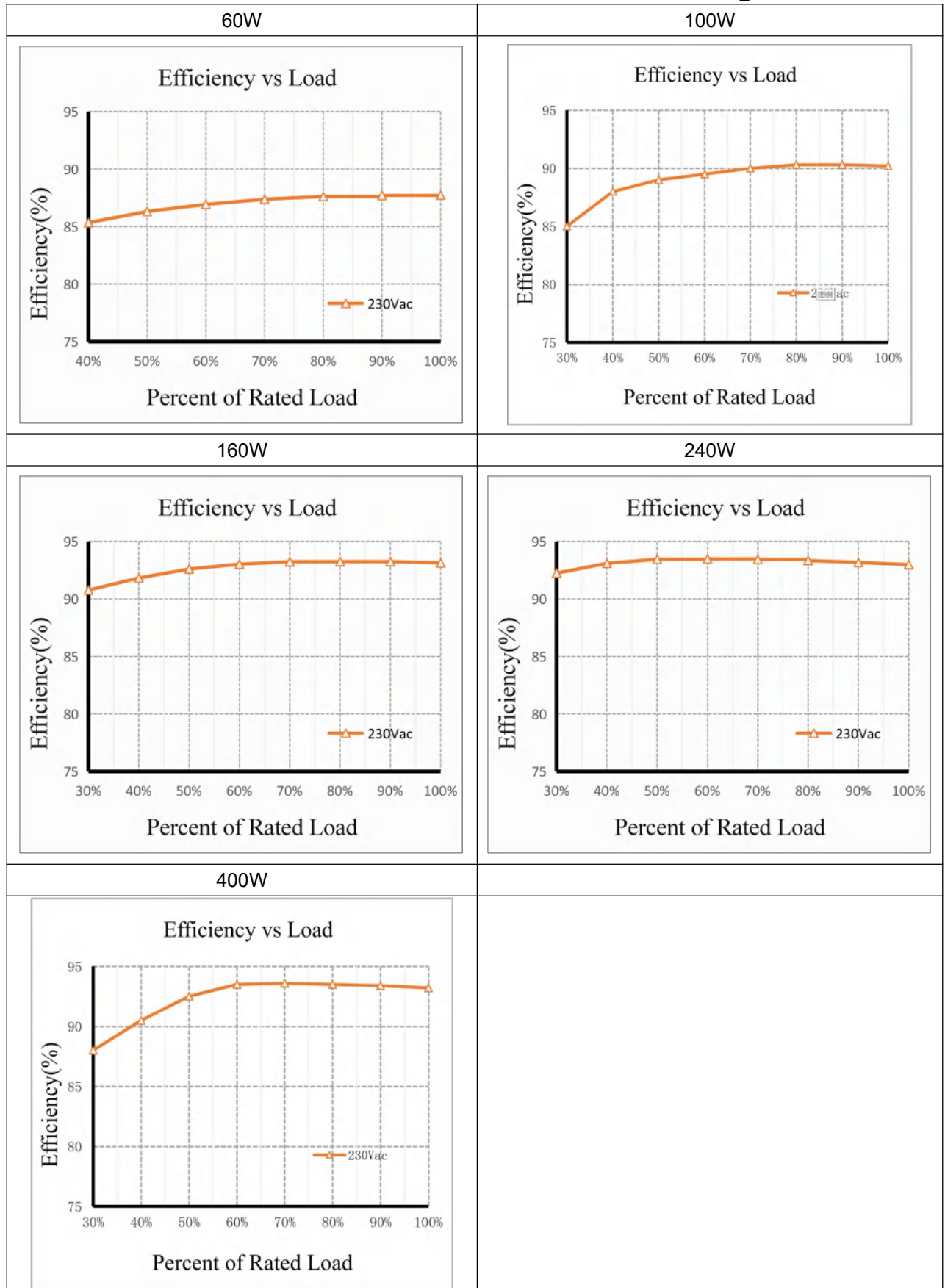
THD VS LOAD Curve



Efficiency VS LOAD Curve

KGP Electronics GmbH
Hueckstraße 19
DE-58511 Lüdenscheid

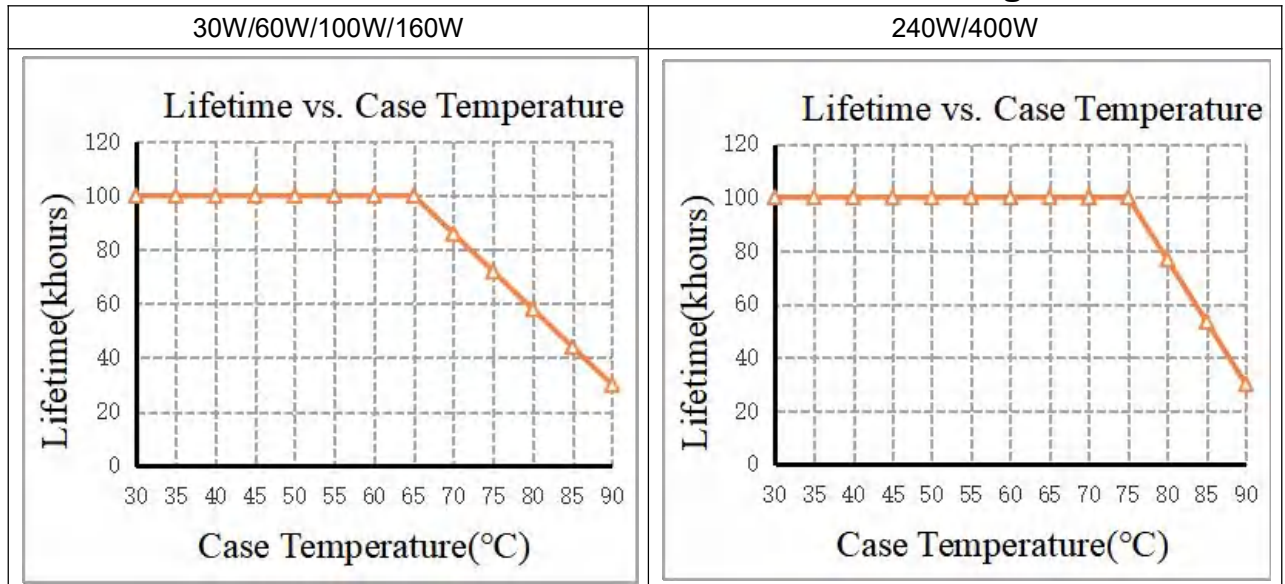
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Lifetime vs. Case Temperature

KGP Electronics GmbH
Hueckstraße 19
DE-58511 Lüdenscheid

Constant Voltage LED Driver



(End of Life: Maximum Failure Rate=10%)

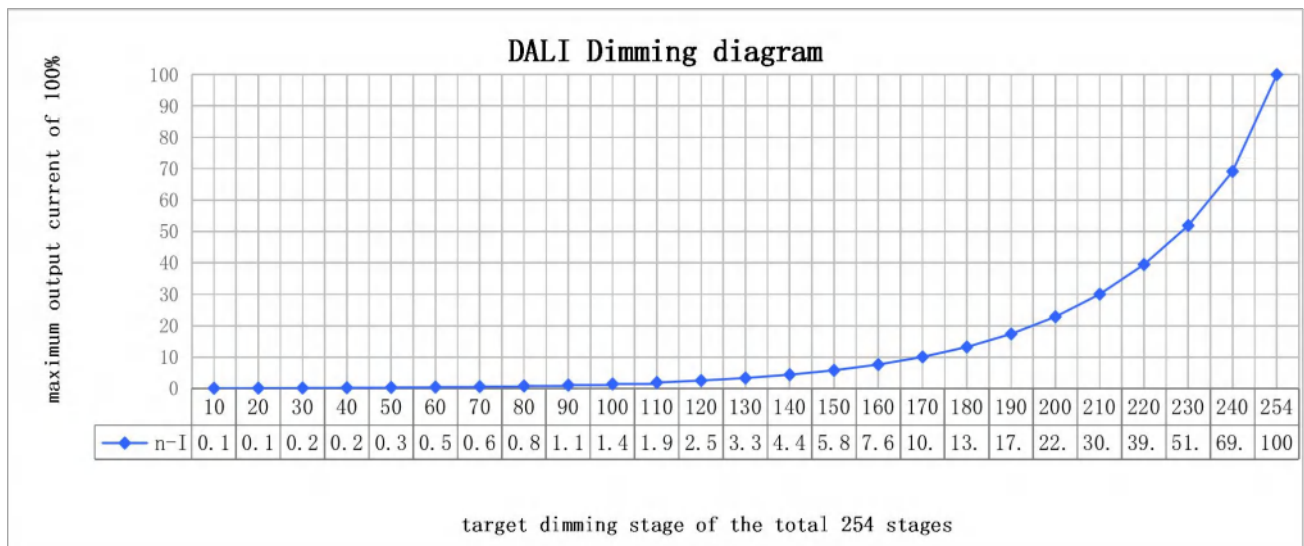
3.DALI dimming curve

3.1 formula for DALI dimming.

$$X(n) = 10^{\left\{ \left[\frac{(n-1)}{(253/3)} \right] - 1 \right\}}$$

Here, n means the target dimming stage of the total 254 stages.

X(n) means the percent of the maximum output current



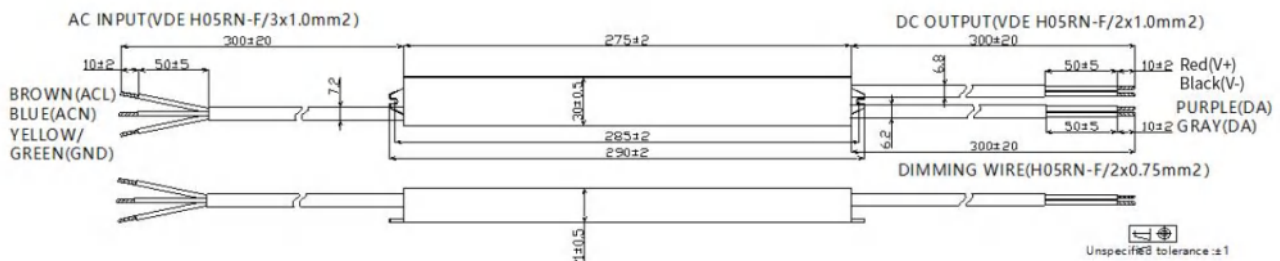
Constant Voltage LED Driver

4.Label

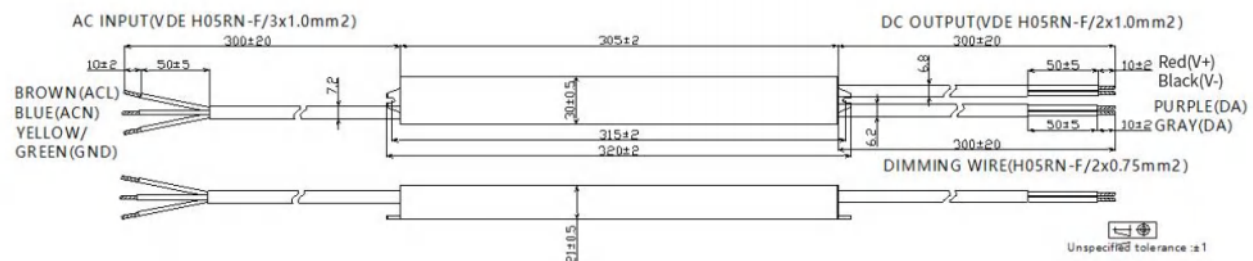
☐ L (Brown) ☐ N (Blue) ☒ (Yellow-green)	KGP Electronics GmbH Hueckstraße 19 DE-58511 Lüdenscheld	XSV60W48 DALI 149381 Dimmable LED Driver Constant Voltage Type For LED modules only	Input: 220-240V~, 50/60Hz, 0.4A, $\lambda:0.95$ Output: 48V= 0-1.25A Max.60W •tc Ta: -25 ~ +50°C Tc:75°C 	(Blue) + (Brown) + (Purple)DA (Gray)DA
☐ L (Brown) ☐ N (Blue) ☒ (Yellow-green)	KGP Electronics GmbH Hueckstraße 19 DE-58511 Lüdenscheld	XSV100W48 DALI 148921 Dimmable LED Driver Constant Voltage Type For LED modules only	Input: 220-240V~, 50/60Hz, 0.6A, $\lambda:0.95$ Output: 48V= 0-2.1A Max.100W •tc Ta: -25 ~ +50°C Tc:75°C 	(Blue) + (Brown) + (Purple)DA (Gray)DA
☐ L (Brown) ☐ N (Blue) ☒ (Yellow-green)	KGP Electronics GmbH Hueckstraße 19 DE-58511 Lüdenscheld	XSV180W48 DALI 149021 Dimmable LED Driver Constant Voltage Type For LED modules only	Input: 220-240V~, 50/60Hz, 0.9A, $\lambda:0.95$ Output: 48V= 0-3.34A Max.180W •tc Ta: -25 ~ +50°C Tc:85°C 	(Blue) + (Brown) + (Purple)DA (Gray)DA
☐ L (Brown) ☐ N (Blue) ☒ (Yellow-green)	KGP Electronics GmbH Hueckstraße 19 DE-58511 Lüdenscheld	XSV240W48 DALI 149141 Dimmable LED Driver Constant Voltage Type For LED modules only	Input: 220-240V~, 50/60Hz, 1.5A, $\lambda:0.95$ Output: 48V= 0-5A Max.240W •tc Ta: -25 ~ +50°C Tc:90°C 	(Blue) + (Brown) + (Purple)DA (Gray)DA
☐ L (Brown) ☐ N (Blue) ☒ (Yellow-green)	KGP Electronics GmbH Hueckstraße 19 DE-58511 Lüdenscheld	XSV400W48 DALI 149281 Dimmable LED Driver Constant Voltage Type For LED modules only	Input: 220-240V~, 50/60Hz, 2.3A, $\lambda:0.95$ Output: 48V= 0-8.34A Max.400W •tc Ta: -25 ~ +50°C Tc:90°C 	(Blue) + (Brown) + (Purple)DA (Gray)DA

5.Dimension (Unit: mm)

XSV60W48 DALI

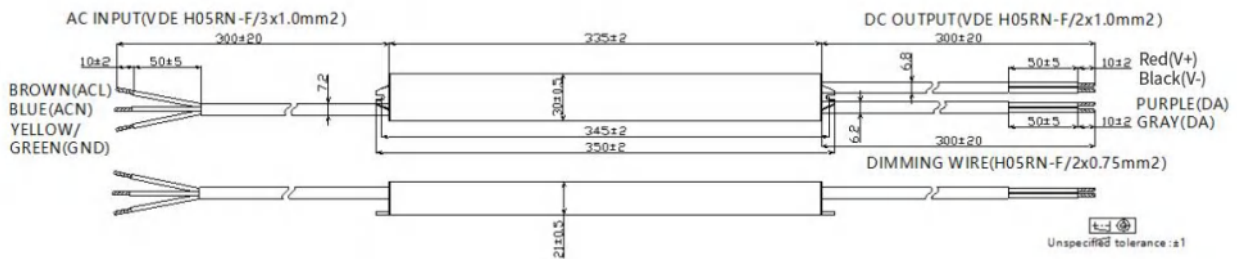


XSV100W48 DALI

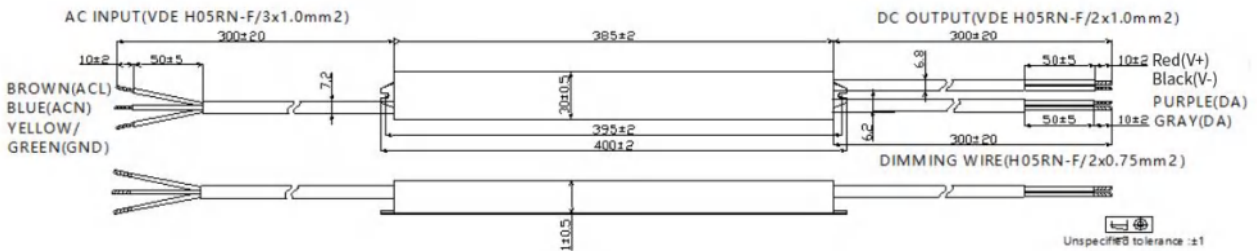


Constant Voltage LED Driver

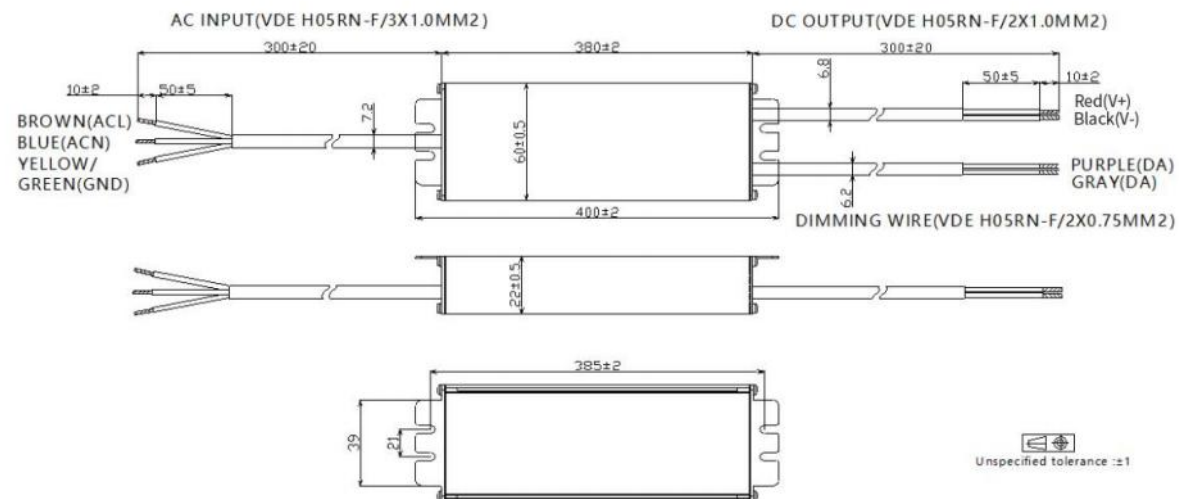
XSV160W48 DALI



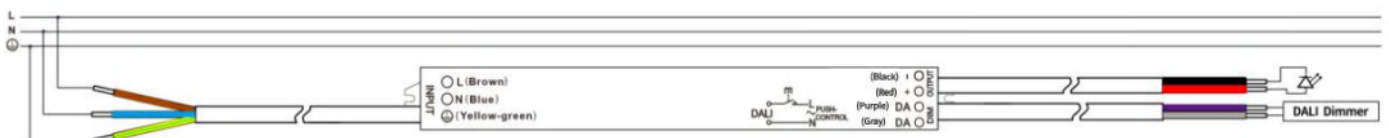
XSV240W48 DALI



XSV400W48 DALI



6.Wiring Diagram



Constant Voltage LED Driver

7.Packing information

Model	Carton L*W*H(cm)	Pcs/ Carton	Net weight/ Pcs(g)	Net weight/ Carton(kg)	Gross weight/ Carton(kg)
XSV60W48 DALI	34*29*20	30	390	11.7	13.3
XSV100W48 DALI	39*29*20	30	420	12.6	14.3
XSV160W48 DALI	39*29*20	30	470	14.1	15.8
XSV240W48 DALI	44*29*14	20	530	10.6	11.9
XSV400W48 DALI	44*29*14	12	1050	12.6	13.6

8.Ordering data

Model No	Item code
XSV60W48 DALI	149381
XSV100W48 DALI	148921
XSV160W48 DALI	149021
XSV240W48 DALI	149141
XSV400W48 DALI	149281

9.REVISION HISTORY

Date	Revision	Remark
2021-11-15	A	Preliminary Edition
2022-03-06	B	Standard Edition
2024-05-17	C	Add ENEC certification mark
2024-08-12	D	Add life vs. Tc curve
2024-09-28	E	Update carton qty
2024-10-26	F	Output wire color change to red/black
2025-08-05	G	Add item code
2025-12-08	H	When connecting DALI controller ,need to reset the power supply.