

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.)
XSV30W24 DALI	149181	220-240VAC	≤36W	≤0.2A	≥0.95	0-30W	24V	1.25A	86%
XSV60W24 DALI	149331		≤72W	≤0.4A		0-60W		2.50A	88%
XSV100W24 DALI	148861		≤115W	≤0.6A		0-100W		4.17A	90%
XSV160W24 DALI	148951		≤180W	≤0.9A		0-160W		6.67A	92%
XSV240W24 DALI	149061		≤265W	≤1.5A		0-240W		10.00A	92%
XSV400W24 DALI	149231		≤435W	≤2.3A		0-400W		16.67A	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}		
		30W	<30A	25A	200us			
		60W	<30A	26A	220us			
		100W	<50A	45A	250us			
		160W	<60A	56A	250us			
		240W	<80A	76A	320us			
		400W	<100A	88A	430us			

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	Connected quantity of 16A Breaker	30W	16pcs,16A type B / 26pcs 16A type C		
		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	24VDC±3%			
	Rated Load Range	30W	9-30W		
		60W	24-60W		
		100W	30-100W		
		160W	48-160W		
		240W	72-240W		
		400W	120-400W		
	Output Voltage Ripple	<240mV _{PK-PK} (0.5%)			
	Line Regulation	±1%			
	Load Regulation	±2%			
	Overshoot	<105%Vo (<110%Vo, only for 30W)			
	Start-up Time	0.6S(typ.) (220-240VAC)			
	Efficiency	30W	≥84%	86% typ.	230VAC, Rated Load, at output terminals, see graphs
		60W	≥86%	88% typ.	
		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	30W/60W/100W	75℃		
		160W	85℃		

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		240W/400W	90℃
	Humidity	5%....85%RH	
	Atmosphere	86-108KPa	
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℃ case temperature, refer to life vs. Tc curve
		240W/400W	≥100K Hrs 75℃ 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	385*60*22MM (body), 400*60*22MM (endcaps included)
	Wiring	Input	H05RN-F/3X1.0mm ² , Brown/Blue/(Yellow/Green)
		Output	H05RN-F/2X1.0mm ² , Red/Black (Two cables are connected in parallel for 400W)
		DALI	H05RN-F/2X0.75mm ² , Purple/Gray
	Output Cable Length	Max. 1M	

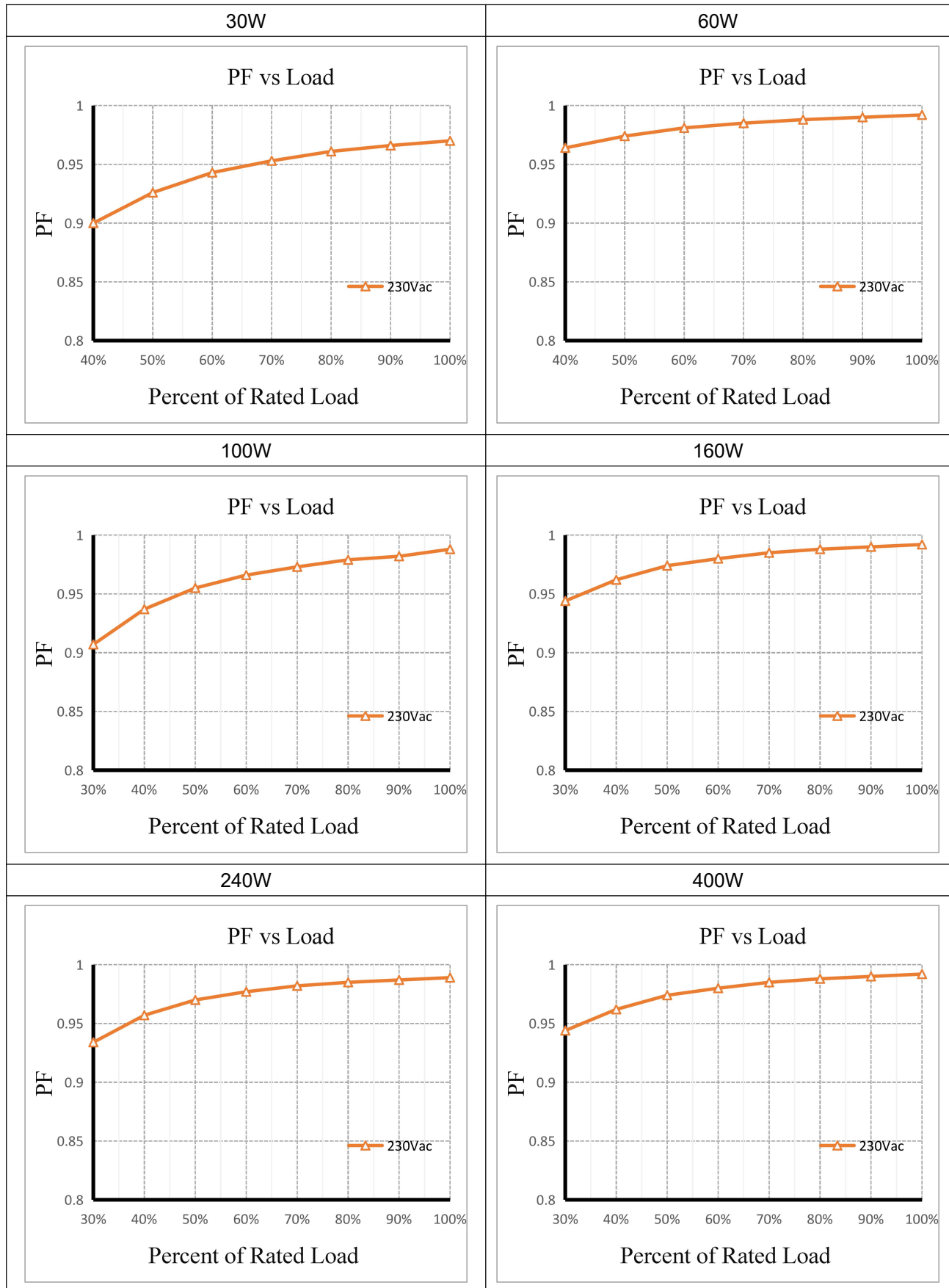
Remark:

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/50V ceramic capacitance and 47uF/50V Aluminum capacitance connected in parallel. Measured using oscilloscope with bandwidth limited to 20MHz.

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2.Graph

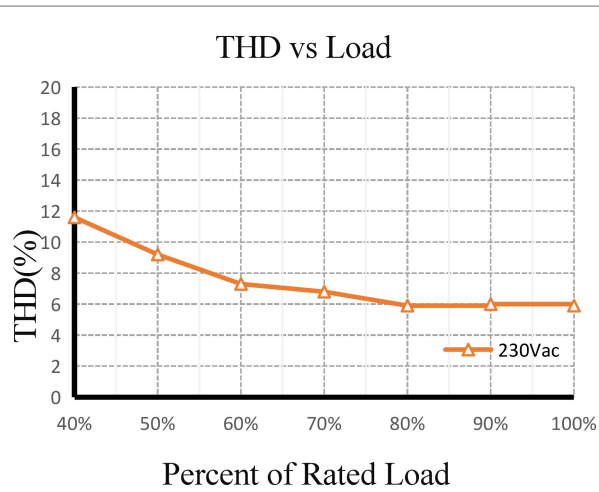
PF VS LOAD Curve



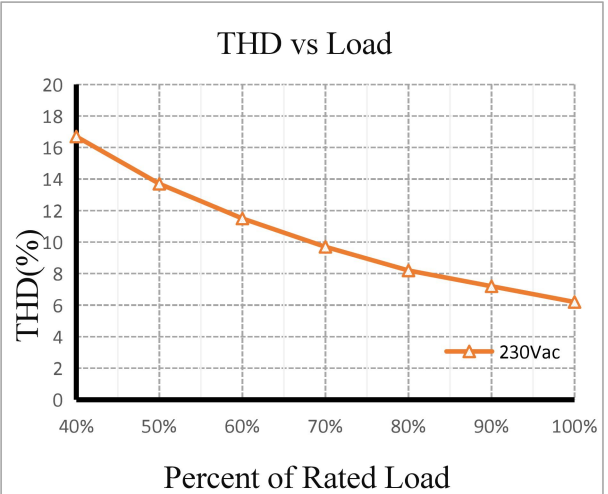
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THD VS LOAD Curve

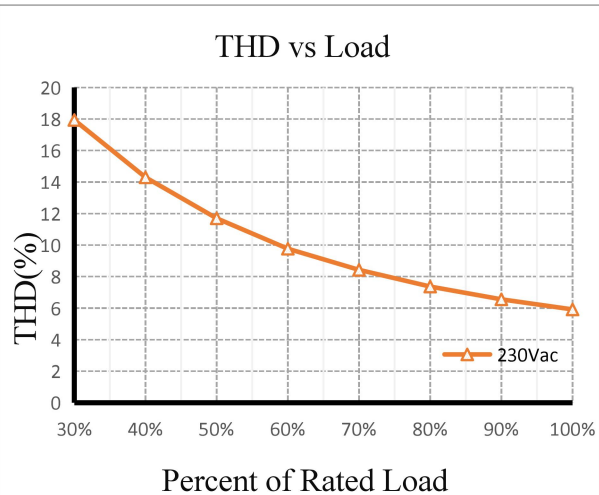
30W



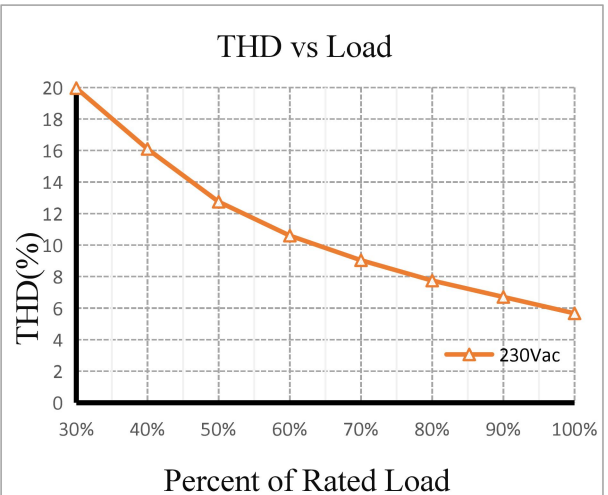
60W



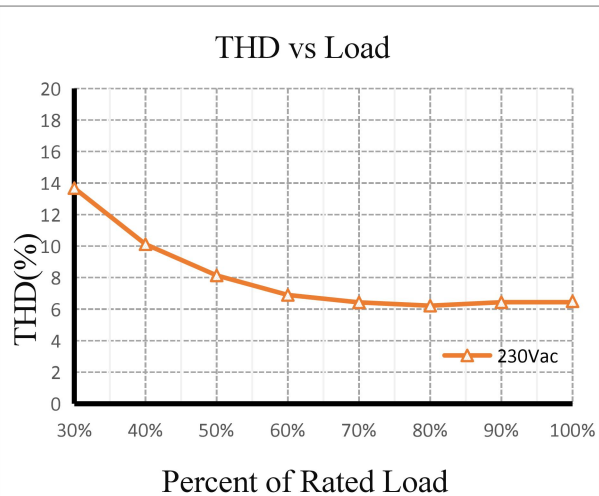
100W



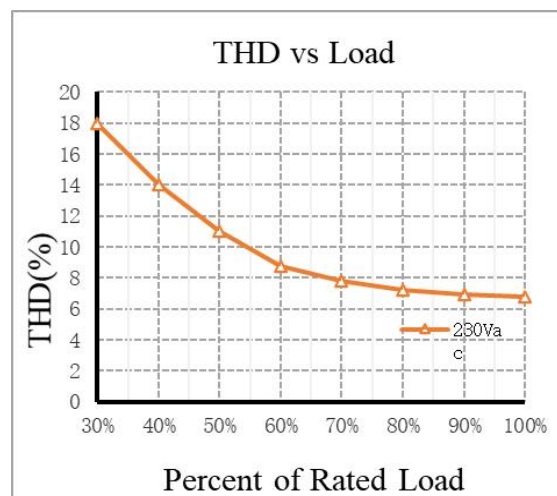
160W



240W

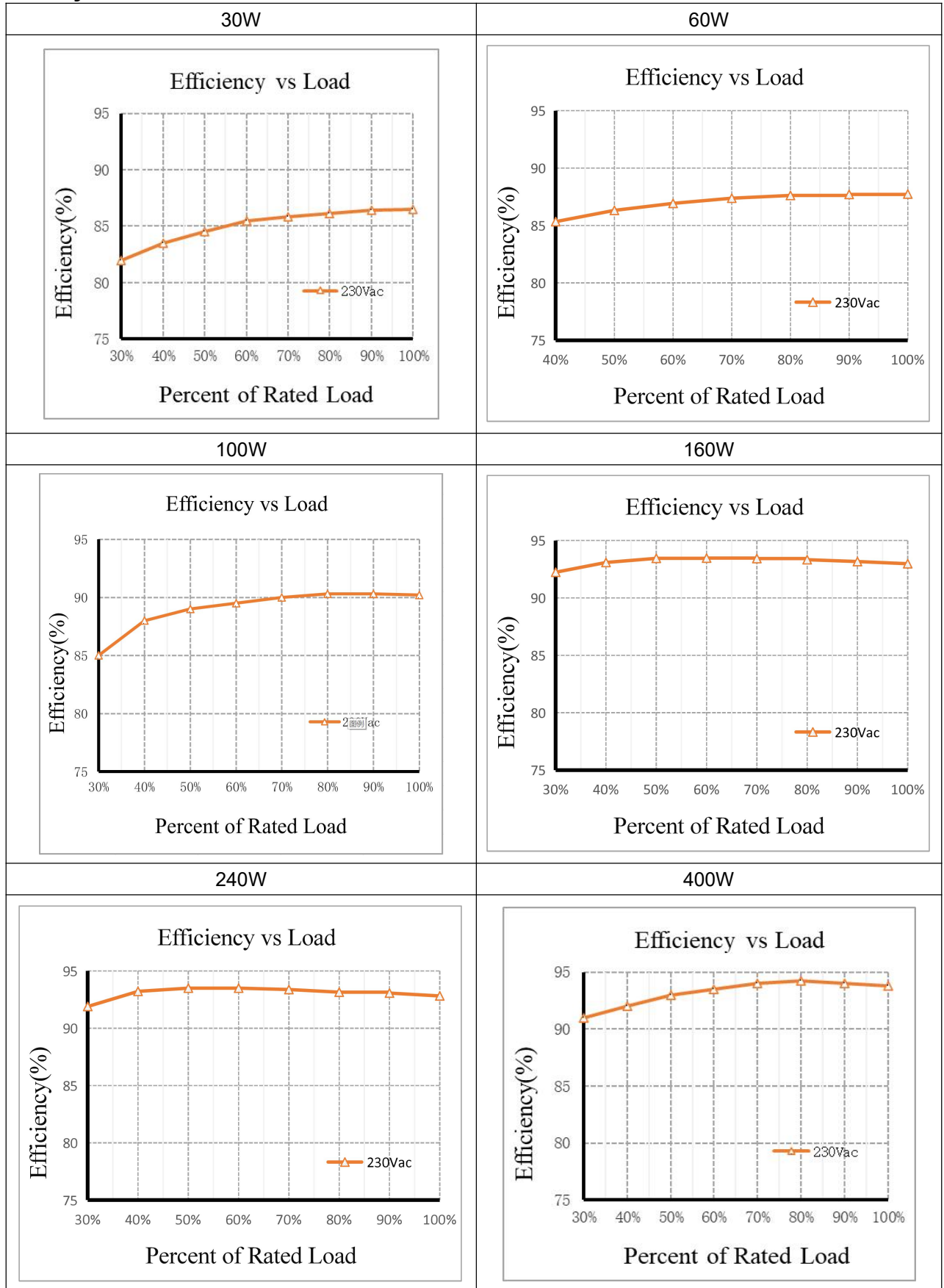


400W



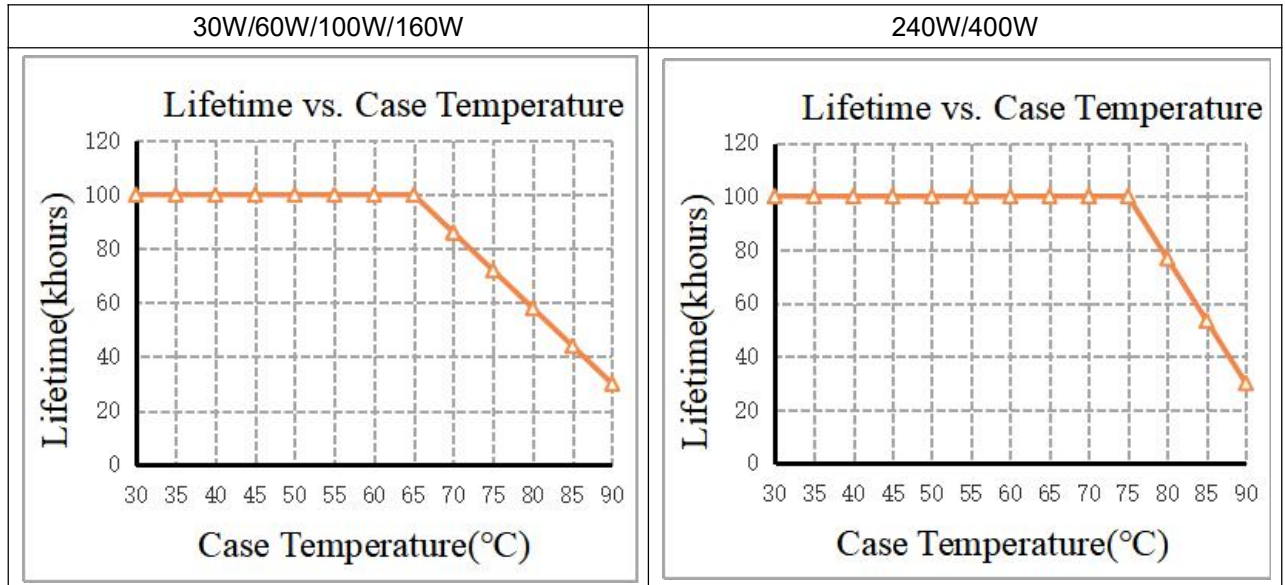
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Efficiency VS LOAD Curve



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Lifetime vs. Case Temperature



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

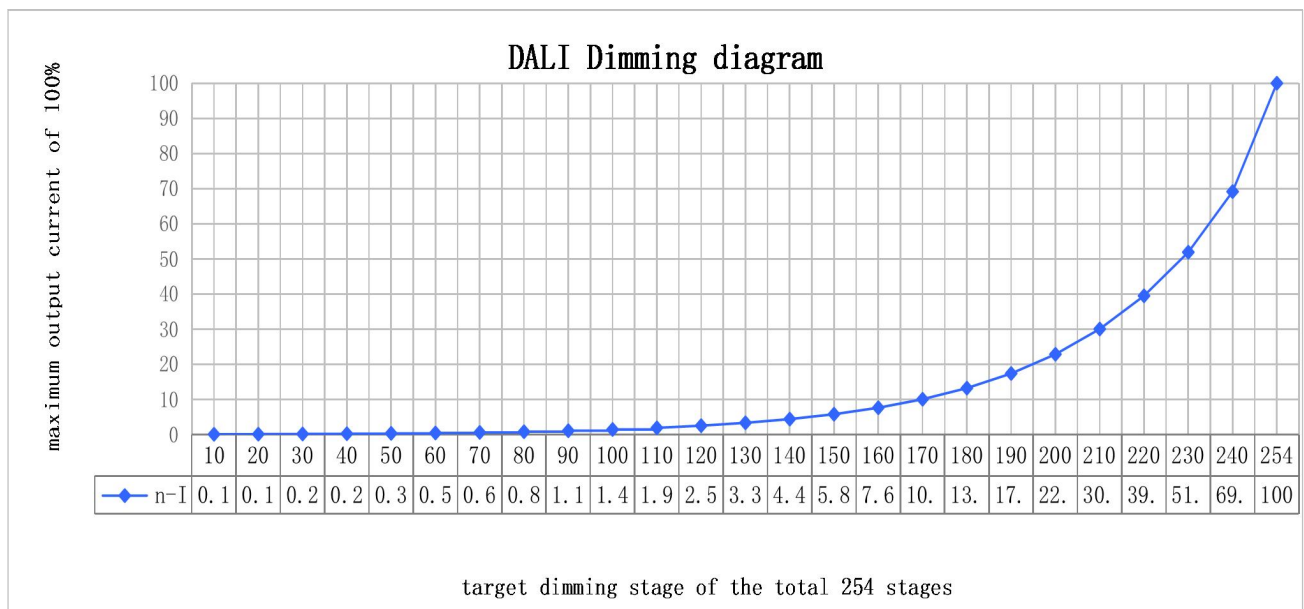
3.DALI dimming curve

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



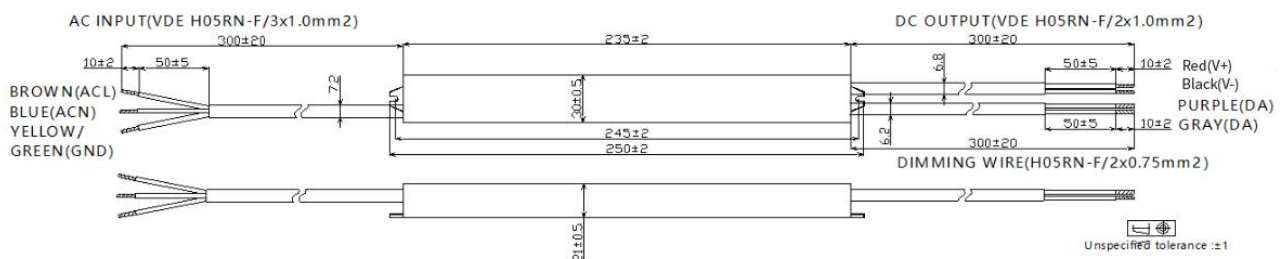
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4.Label

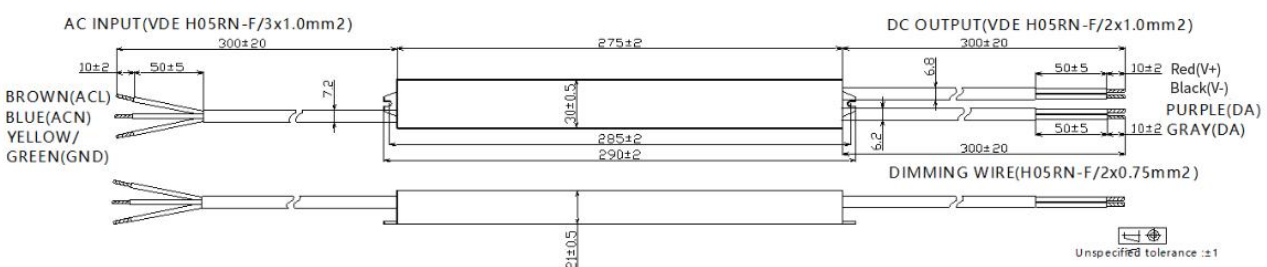
☐ L (Brown) ☐ N (Blue) ☒ (Yellow-green)	Hueckstraße 19 DE-58511 Lüdenscheid	XSV30W24 DALI 149181 Dimmable LED Driver Constant Voltage Type For LED modules only	Input: 220-240V~, 50/60Hz, 0.2A, $\lambda: 0.95$ Output: 24V= 0-1.25A Max.30W •tc Ta: -25 ~ +50°C Tc:75°C		(Blue) I (Brown)+ (Purple)DA (Gray)DA	OUTPUT DIM
☐ L (Brown) ☐ N (Blue) ☒ (Yellow-green)	Hueckstraße 19 DE-58511 Lüdenscheid	XSV60W24 DALI 149331 Dimmable LED Driver Constant Voltage Type For LED modules only	Input: 220-240V~, 50/60Hz, 0.4A, $\lambda: 0.95$ Output: 24V= 0-2.5A Max.60W •tc Ta: -25 ~ +50°C Tc:75°C		(Blue) I (Brown)+ (Purple)DA (Gray)DA	OUTPUT DIM
☐ L (Brown) ☐ N (Blue) ☒ (Yellow-green)	Hueckstraße 19 DE-58511 Lüdenscheid	XSV100W24 DALI 148861 Dimmable LED Driver Constant Voltage Type For LED modules only	Input: 220-240V~, 50/60Hz, 0.6A, $\lambda: 0.95$ Output: 24V= 0-4.17A Max.100W •tc Ta: -25 ~ +50°C Tc:75°C		(Blue) I (Brown)+ (Purple)DA (Gray)DA	OUTPUT DIM
☐ L (Brown) ☐ N (Blue) ☒ (Yellow-green)	Hueckstraße 19 DE-58511 Lüdenscheid	XSV160W24 DALI 148951 Dimmable LED Driver Constant Voltage Type For LED modules only	Input: 220-240V~, 50/60Hz, 0.9A, $\lambda: 0.95$ Output: 24V= 0-6.67A Max.160W •tc Ta: -25 ~ +50°C Tc:85°C		(Blue) I (Brown)+ (Purple)DA (Gray)DA	OUTPUT DIM
☐ L (Brown) ☐ N (Blue) ☒ (Yellow-green)	Hueckstraße 19 DE-58511 Lüdenscheid	XSV240W24 DALI 149061 Dimmable LED Driver Constant Voltage Type For LED modules only	Input: 220-240V~, 50/60Hz, 1.5A, $\lambda: 0.95$ Output: 24V= 0-10A Max.240W •tc Ta: -25 ~ +50°C Tc:90°C		(Blue) I (Brown)+ (Purple)DA (Gray)DA	OUTPUT DIM
☐ L (Brown) ☐ N (Blue) ☒ (Yellow-green)	Hueckstraße 19 DE-58511 Lüdenscheid	XSV400W24 DALI 149181 Dimmable LED Driver Constant Voltage Type For LED modules only	Input: 220-240V~, 50/60Hz, 2.3A, $\lambda: 0.95$ Output: 24V= 0-16.67A Max.400W •tc Ta: -25 ~ +50°C Tc:90°C		(Blue) I (Brown)+ (Blue) I (Brown)+ (Purple)DA (Gray)DA	OUTPUT DIM DIM DIM

5.Dimension (Unit: mm)

XSV30W24 DALI

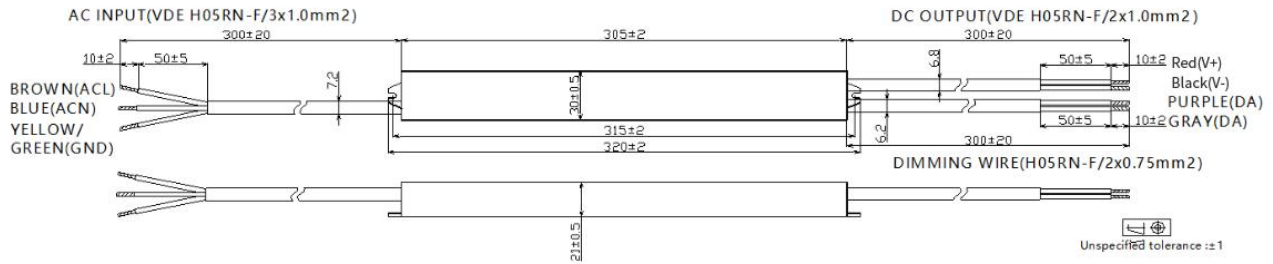


XSV60W24 DALI

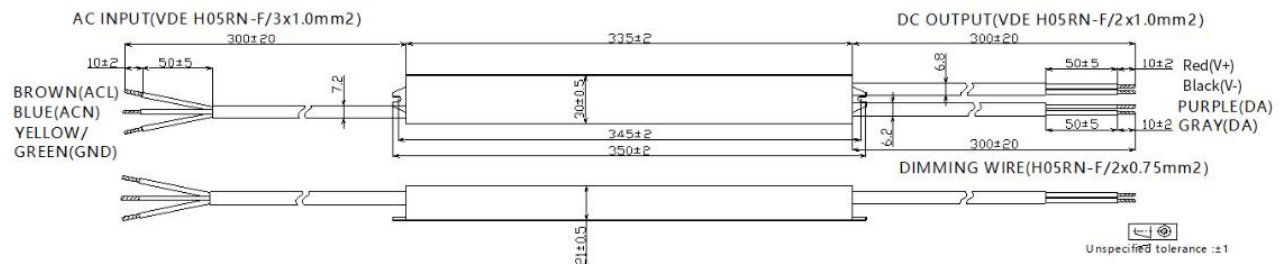


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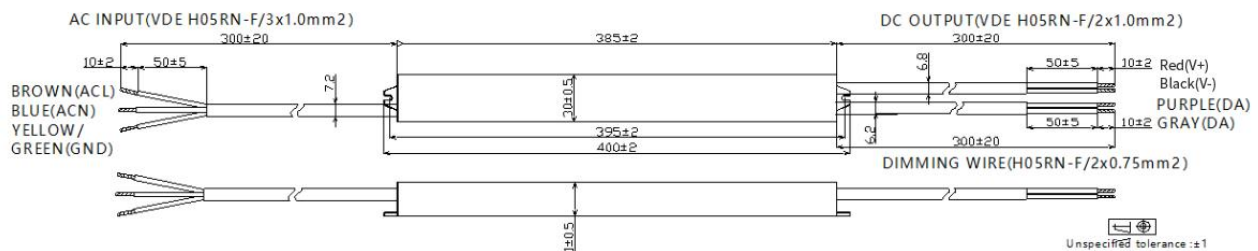
XSV100W24 DALI



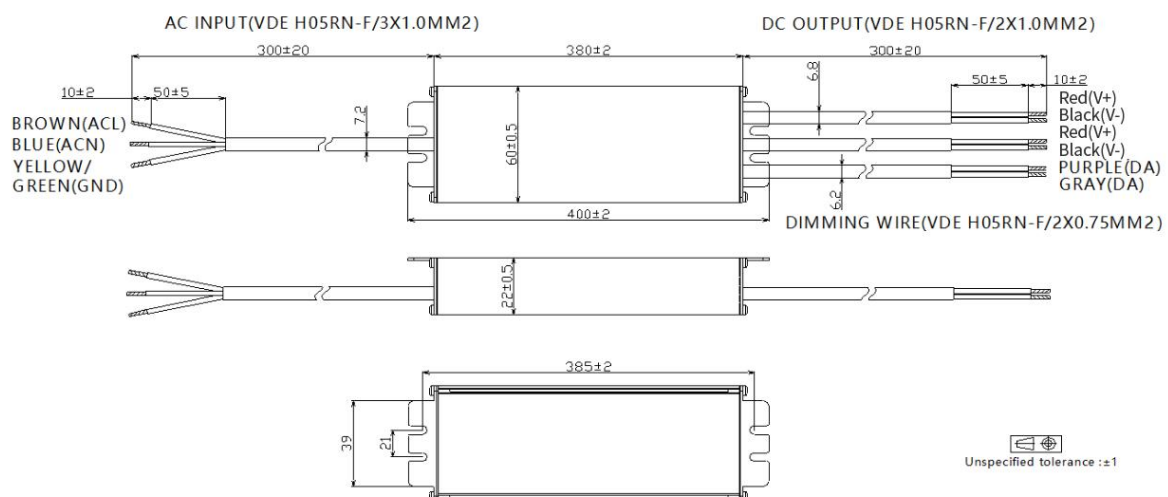
XSV160W24 DALI



XSV240W24 DALI



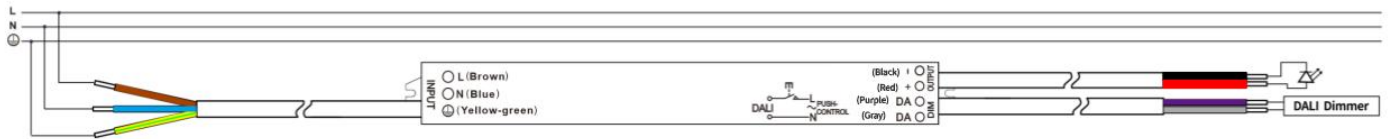
XSV400W24 DALI



Remark: Two output cables are in parallel inside the drive, and the current of each cable must not exceed 10A.

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6.Wiring Diagram



7.Packing information

Model	Carton L*W*H(cm)	Pcs/ Carton	Net weight/ Pcs(g)	Net weight/ Carton(kg)	Gross weight/ Carton(kg)
XSV30W24 DALI	34*29*20	30	340	10.2	11.8
XSV60W24 DALI	34*29*20	30	390	11.7	13.3
XSV100W24 DALI	39*29*20	30	420	12.6	14.3
XSV160W24 DALI	39*29*20	30	470	14.1	15.8
XSV240W24 DALI	44*29*14	20	530	10.6	11.9
XSV400W24 DALI	44*29*14	12	1050	12.6	13.6

8.Ordering data

Model No	Item code
XSV30W24 DALI	149181
XSV60W24 DALI	149331
XSV100W24 DALI	148861
XSV160W24 DALI	148951
XSV240W24 DALI	149061
XSV400W24 DALI	149231

9.REVISION HISTORY

Date	Revision	Remark
2021-08-30	A	Preliminary Edition
2021-11-15	B	Add 400W, update packing information
2024-05-17	C	Minimum Rated Load Range of 30W , changed from 12W to 9W; 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
2025-05-16	G	Updated cable using note of 400W
2025-08-05	H	Add item code