

EXC SERIES LED DRIVERS

DL-50W-EXC_V1.0

Guangdong DONE Electronic Technology Co., Ltd

Features

- Input voltage: 100-240Vac ~ 50/60Hz
- Efficiency :88%(Typ.) natural air cooling
- constant voltage output control mode
- Class I Metal housing structure, protection class: IP20
- Lightning protection level: differential mode 2KV, common mode 4KV
- 200% Peak Power On Capability (Option B version)
- All-round protection: output over-voltage, output over-current, short circuit protection
- No load power consumption less than 0.5W
- 3years warranty



Product introduction

DONE DL-50W-EXC is a series of constant voltage products with output power of 50W. 50W-EXC operates from 90-264Vac, and offers 12、15、24、36、48Vdc with different mode. The also provide perfect、OVP、 OLP、 SCP ,and the product is designed with IP20 protection. The aluminum plate housing greatly improves the heat dissipation efficiency of the product and increases the reliability of the product for outdoor applications. To provide customers with reliable power supply solutions in industrial control, automation and lighting fields,Version B provides 200% peak power capability at boot for inductive loads that require higher power immediately after start.

Model list

Model NO.	Input voltage	Output power	Output voltage	The default current	Eff. (Typ.)	T.H.D	PF
DL-50W-V12-EXC	100-240Vac 50/60Hz	50W	12Vdc	0-4.17A	≥88%	-	>0.5
DL-50W-V15-EXC	100-240Vac 50/60Hz	50W	15Vdc	0-3.34A	≥88%	-	>0.5
DL-50W-V24-EXC	100-240Vac 50/60Hz	50W	24Vdc	0-2.08A	≥89%	-	>0.5
DL-50W-V36-EXC	100-240Vac 50/60Hz	50W	36Vdc	0-1.4A	≥89%	-	>0.5
DL-50W-V48-EXC	100-240Vac 50/60Hz	50W	48Vdc	0-1.05A	≥89%	-	>0.5

Note:

1. Test conditions of the above parameters: Ta=25℃, 230Vac input, full load operation for 30 minutes;
2. Including setting error, linear adjustment rate and load adjustment rate;
3. Power supply is used as a component with terminal equipment. EMC is affected by the whole set of devices. Terminal equipment manufacturers need to re-confirm the EMC for the whole set of devices.
4. Industrial control shell power supply according to IT/AV standards, EMC according to ClassA level.

Input characteristics

Parameter	Min	Typ.	Max	Note
Rated input voltage	100Vac 140Vdc	230Vac	240Vac 330Vdc	N/A
Input voltage range	90Vac	-	264Vac	N/A
Rated frequency	47Hz	50/60Hz	63Hz	N/A
Power factor	-	>0.5	-	100% load, 230Vac input
Input current	-	-	1.2A	100% load, 90Vac input
Inrush current	-	-	80A	230Vac, cold start (25℃)
16A Circuit breaker The number of power supplies of the same model can be configured	7pcs (Type B circuit breaker)11pcs (Type C circuit breaker) for 230Vac input			

Output characteristics

Parameter	Min	Typ.	Max	Note
Output current range				
DL-50W-V12-EXC		4.17A		
DL-50W-V15-EXC		3.34A		
DL-50W-V24-EXC	-	2.08A	-	N/A
DL-50W-V36-EXC		1.4A		
DL-50W-V48-EXC		1.05A		
Output voltage range				
DL-50W-V12-EXC	10.2V	12V	13.8V	
DL-50W-V15-EXC	13.5V	15V	18V	
DL-50W-V24-EXC	21.6V	24V	28.8V	N/A
DL-50W-V36-EXC	32.4V	36V	39.6V	
DL-50W-V48-EXC	43.2V	48V	52.8V	
Rated power(100-240Vac)	-	50W	-	N/A
Efficiency@230Vac				
DL-50W-V12-EXC	87%	88%		
DL-50W-V15-EXC	87%	88%		
DL-50W-V24-EXC	88%	89%	-	full load @230Vac
DL-50W-V36-EXC	88%	89%		
DL-50W-V48-EXC	89%	89%		

Output characteristic

Parameter	Min	Typ.	Max	Note
Output voltage ripple	240mV@UP-12/15/24VDC/360mV@UP-36/48VDC			Full load
Accuracy of output voltage	-1%	-	+1%	Full load
Line regulation	-1%	-	+1%	50-100% load@230Vac
Load regulation	-1%	-	+1%	50-100% load@230Vac
Starting time	-	-	500ms	Full load@230Vac
Rise time	-	-	30ms	Full load@230Vac
Hold time	16ms	-	-	Full load@230Vac

Protection

Function	Function instructions
Output overload protection	Protection mode:hiccup mode,recovers automatically after fault condition is removed.
Output short circuit protection	Hiccup mode:recovers automatically after fault condition is removed
Output over-voltage protection	Output voltage > working voltage 1.08-1.5times turn-off
Output over-current protection	Output current >1.1-1.5times turn-off
Peak Power protection (optional B)	Supports maximum 160% peak power 5S for 100-180Vac input and 200% peak power 5S for 180-240Vac input

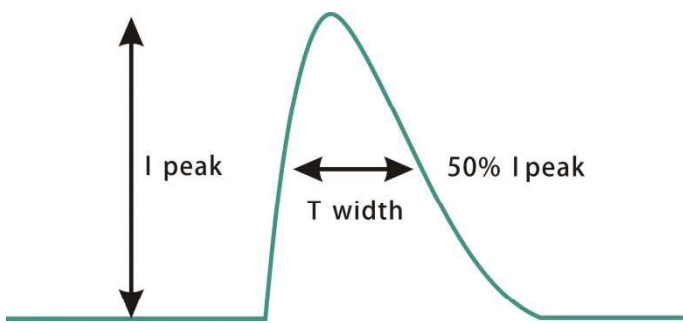
Safety and EMC

Safety categories	Standard
Safety	UL62368-1, TUV BS EN/EN62368-1, BS EN/EN60335-1, BS EN/EN61558-1/-2-16,GB 4943.1
EMC	BS EN/EN55032 (CISPR32) Class A, BS EN/EN55014, BS EN/EN61000-3-2 Class A($\leq 80\%$ Load)
Surge protection	Differential mode L-N $\pm 2\text{KV}$ (2 ohm) ,common mode L, N-PE $\pm 4\text{KV}$ (12 ohm) ; Refer to IEC61000-4-5 2014
High-pot test	I/P-O/P:4KVac I/P-PE :2KVac O/P-PE : 1.25KVac
Insulation impedance	I/P-PE:100M Ω / 500VDC; I/P-O/P:100M Ω / 500VDC / 25℃/ 70% RH
Leakage current	<0.75mA@230Vac

Environmental

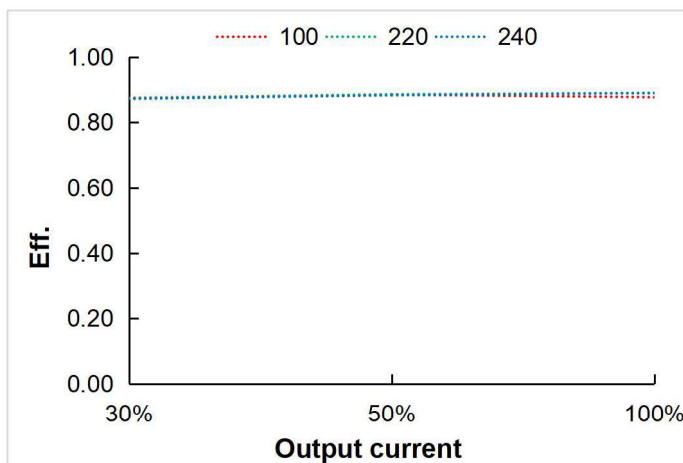
Environmental categories	Parameter
Working temperature	-40~70℃ (refer to "temperature Curve ")
Working humidity	20 ~ 90% RH, non condensing
Storage temperature、 humidity	-30~+85℃, 10 ~ 90% RH
Resistant to vibration	10 ~ 500Hz, 5G 12 min/cycle, X, Y, Z axis 72 min each
MTBF	230Khrs min. MIL-HDBK-217F (Ta=25℃)
Lifetime	50,000 hours @Ta $\leq 55^{\circ}\text{C}$,230Vac, 100% Load(20% derating for every 10℃ rise)

Inrush current

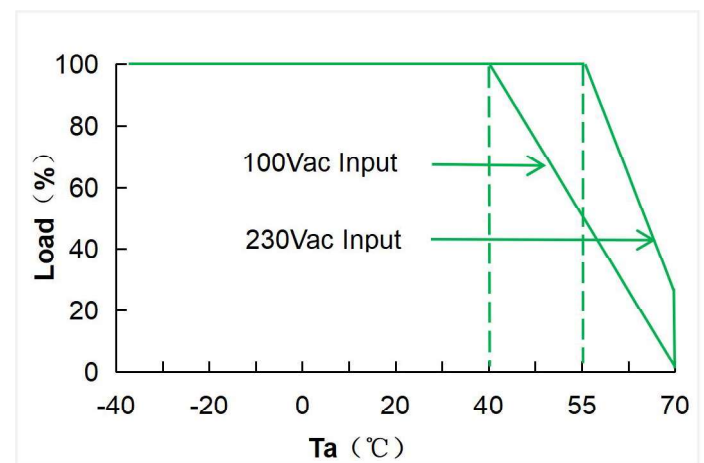


Input voltage	Peak current	T(@50% Peak current)
100Vac	27.33A	166us
230Vac	62.67A	187us
264Vac	66A	205us

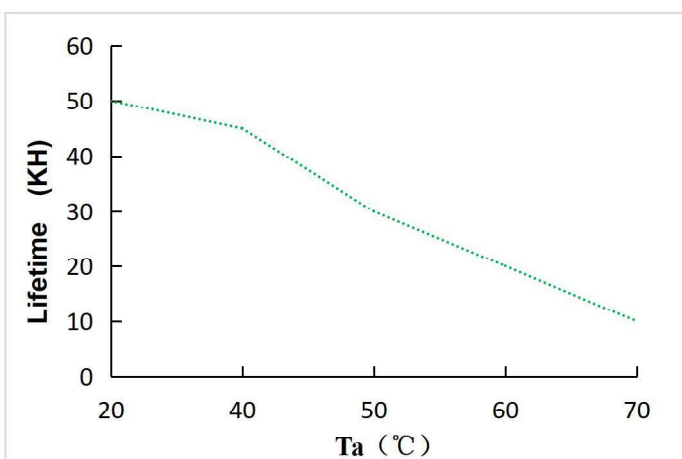
DL-50W-EXC Parametric curves



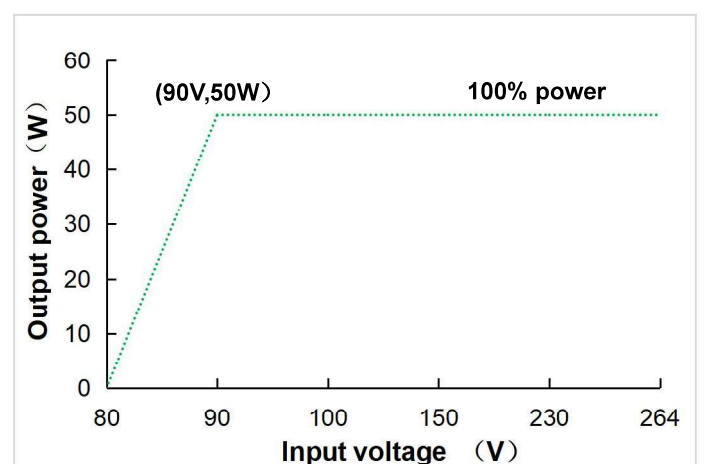
Eff. VS Output current



Load VS T_a



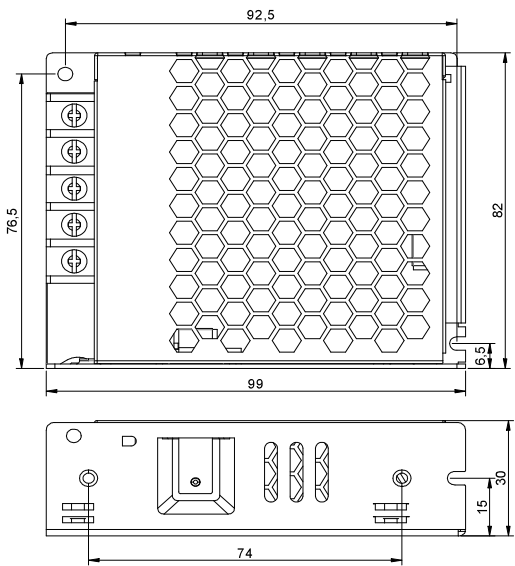
Lifetime VS T_a



Output power VS Input voltage

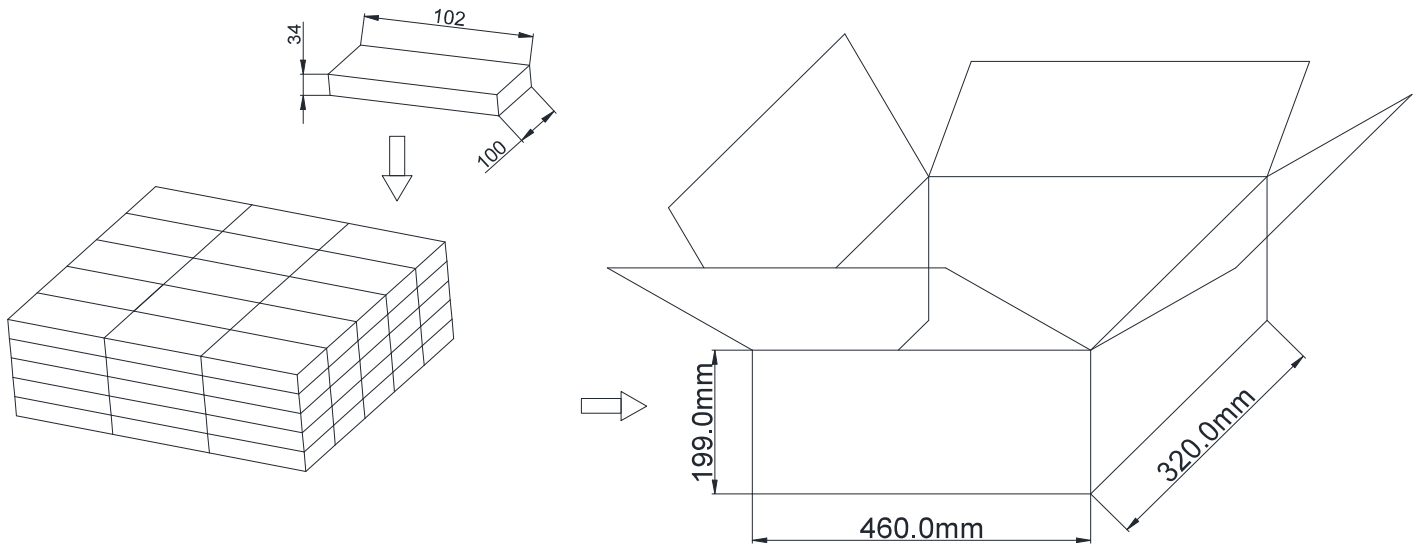
Mechanical specification

Size (mm)	L99mm*W82mm*H30mm	0.185KG
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Packaging

Packaging (mm)	L460mm*W320mm*H199mm
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Note: One Carton 5 layers and 15 pcs each layer, total 75 pcs/carton.

Note:

1. According to the certificate obtained by the LED DRIVER, the LED DRIVER with the English label is sold in Europe, America and India.
2. The LED DRIVER with Chinese label is only used for China market.

Version

DATE	DESCRIPTION	REV.	CHECK
2024.08.20	Initial version.	V1.0	

MANUFACTRUER		
EDIT	CHECK	APPROVTE