

RAC SERIES LED DRIVERS

DL-400H-RAC_V1.1

Guangdong DONE Electronic Technology Co., Ltd

Features

- Input voltage: 200-240V ~ 50/60Hz
- Efficiency :91%(Typ.)
- Constant power drive and constant voltage output control mode
- Metal housing structure
- Lightning protection level: differential mode 4KV, common mode 4KV
- All-round protection: output temperature, output over-voltage, output over-current, short circuit protection
- 3 years warranty



Product introduction

DONE DL-400H-RAC is a series of constant voltage products with output power of 400W. DL-400H-RAC operates from 90-264Vac (Output power drops by half), and offers 12、24、36、48Vdc with different mode. The also provide perfect OTP、OVP、OLP、SCP, Product design metal rain proof structure. The aluminum housing greatly improves increases the reliability of outdoor applications. Provide reliable power supply solutions for outdoor landscape lighting, architectural lighting, and advertising signage lighting.

Model list

Model NO.	Input voltage	Output power	Output voltage	The default current	Eff. (Typ.)	T.H.D	PF
DL-400H-V12-RAC	200-240V 50/60Hz	360W	12Vdc	0-30.0A	≥91%	<10%	>0.97
DL-400H-V24-RAC	200-240V 50/60Hz	400W	24Vdc	0-16.67A	≥90%	<10%	>0.97
DL-400H-V36-RAC	200-240V 50/60Hz	400W	36Vdc	0-11.11A	≥91%	<10%	>0.97
DL-400H-V48-RAC	200-240V 50/60Hz	400W	48Vdc	0-8.34A	≥91%	<10%	>0.97

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. 100 ~200Vac output current derated to 50%;

Input characteristics

Parameter	Min	Typ.	Max	Note
Rated input voltage	200Vac 140Vdc	220Vac	240Vac 330Vdc	100 ~200Vac output current derated to 50%
Input voltage range	90Vac	-	264Vac	100 ~200Vac output current derated to 50%
Rated frequency	47Hz	50/60Hz	63Hz	N/A
Power factor	-	>0.97	-	100% load, 230Vac input
Power factor	-	>0.90	-	75% load, 230Vac input
T.H.D.	-	-	10%	100% load, 230Vac input
T.H.D.	-	-	20%	75% load, 230Vac input
Input current	-	-	2.6A	@176Vac full load
Inrush current	-	-	110A	230Vac, cold start (25°C)
16A Circuit breaker The number of power supplies of the same model can be configured	6pcs (Type C circuit breaker)12pcs (Type D circuit breaker) for 230Vac input			

Output characteristics

Parameter	Min	Typ.	Max	Note
Rated current DL-400H-V12-RAC DL-400H-V24-RAC DL-400H-V36-RAC DL-400H-V48-RAC	-	30A 16.67A 11.11A 8.34A	-	N/A
Voltage regulation range DL-400H-V12-RAC DL-400H-V24-RAC DL-400H-V36-RAC DL-400H-V48-RAC	10V 22.6V 34V 46V	-	14V 26V 38V 50V	N/A
Output voltage range DL-400H-V12-RAC DL-400H-V24-RAC DL-400H-V36-RAC DL-400H-V48-RAC	-	12V 24V 36V 48V	-	N/A
Rated power(200-240Vac)	-	400W	-	DL-400H-V12-RAC Rated 360W
Rated power(100-200Vac)		200W		DL-400H-V12-RAC Rated 180W
No-load voltage DL-400H-V12-RAC DL-400H-V24-RAC DL-400H-V36-RAC DL-400H-V48-RAC	-	-	12.5V 24.5V 36.7V 48.9V	N/A
Efficiency@230Vac DL-400H-V12-RAC DL-400H-V24-RAC DL-400H-V36-RAC DL-400H-V48-RAC	89% 89% 89% 89%	91% 91% 91% 91%	-	full load @230Vac

Output characteristics

Parameter	Min	Typ.	Max	Note
Output voltage Ripple	-	<3%	-	100% load
Accuracy of output voltage	-3%	-	+3%	100% load(12V $\pm$ 3%)
Line regulation	-3%	-	+3%	50-100% load@230Vac
Load regulation	-3%	-	+3%	50-100% load@230Vac
Starting time	-	-	449ms	Full load@230Vac

Protection

Function	Function instructions	AbN automation
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	
Over temperature protection	Self-recovery mode: when the housing temperature is greater than 40℃, the output power off.	
Output over-voltage protection	output voltage > works voltage 1.08-1.2times turn-off	
Output over-current protection	Output current >1.1-1.5times turn-off	

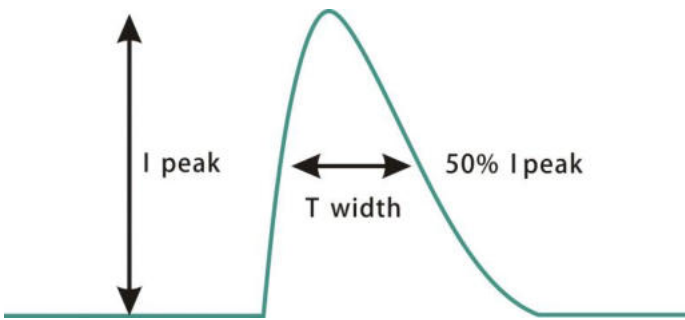
Safety and EMC

Safety categories	Standard
Safety	GB4943.1 , IEC62368-1, EN62368-1
EMC	GB/T9254.1-2021, GB17625.1-2022 、GB/T 17743、GB17625.1 EN55032/55035
Surge protection	Differential mode L-N $\pm 4\text{KV}$ (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:3.75KVac I/P-PE :2KVac O/P-PE : 0.5KVac
Insulation impedance	I/P-PE:100M Ω / 500VDC; I/P-O/P:100M Ω / 500VDC / 25℃/ 70% RH
Leakage current	<5mA@240Vac

Environmental

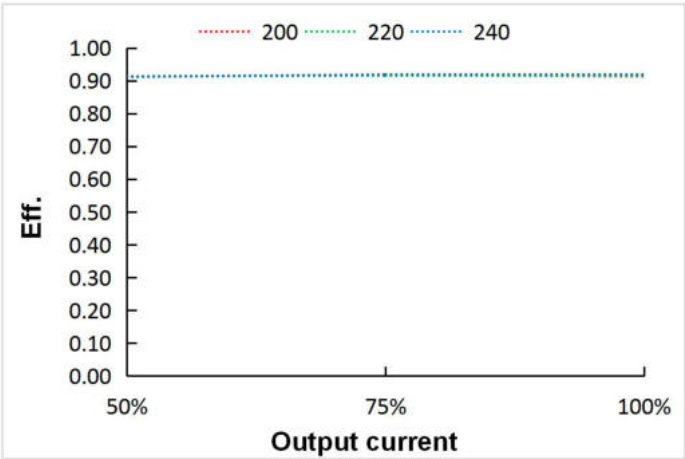
Environmental categories	Parameter
Working temperature	-40 ~ +40℃@200-240Vac , (refer to "Life Curve ")
Working humidity	20 ~ 95% RH, non condensing
Storage temperature、 humidity	--30~+80℃, 10 ~ 95% RH
Resistant to vibration	10 ~ 500Hz, 5G 12 min/cycle, X, Y, Z axis 72 min each
MTBF	230Khrs min. MIL-HDBK-217F (Ta=25℃)
Lifetime	50,000 hours @Ta $\leq 40^{\circ}\text{C}$, 230Vac, 100% Load, Please refer to "Tcase VS Lifetime" section

Inrush current

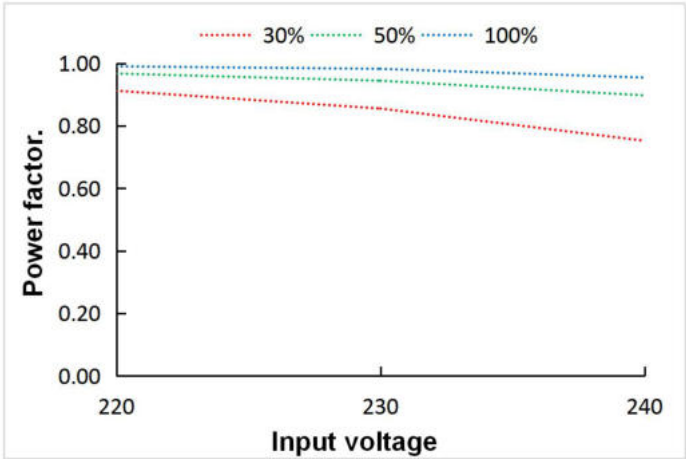


Input voltage	Peak current	T(@50% Peak current)
200Vac	99.4A	260us
220Vac	100A	295us
240Vac	106A	310us

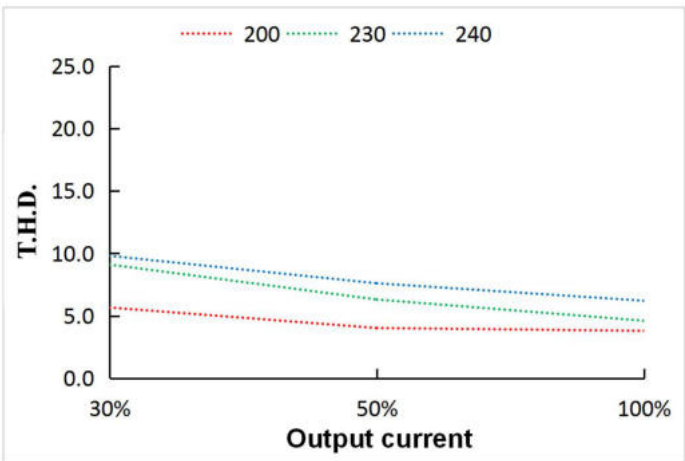
DL-400H-RAC Parametric curves



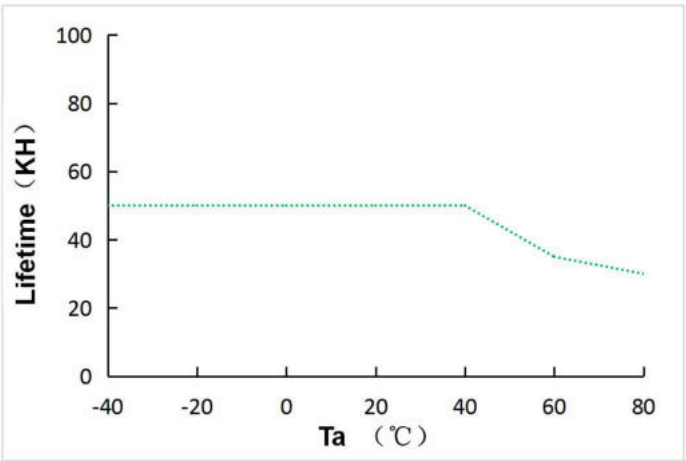
Eff. VS Output current



Power factor VS Input voltage

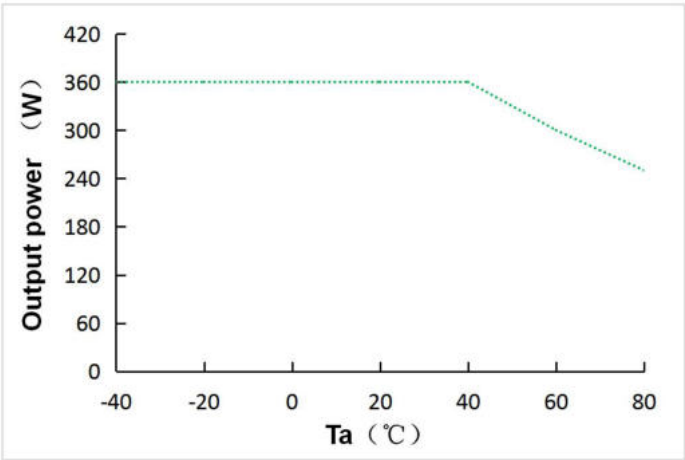


T.H.D. VS Output current

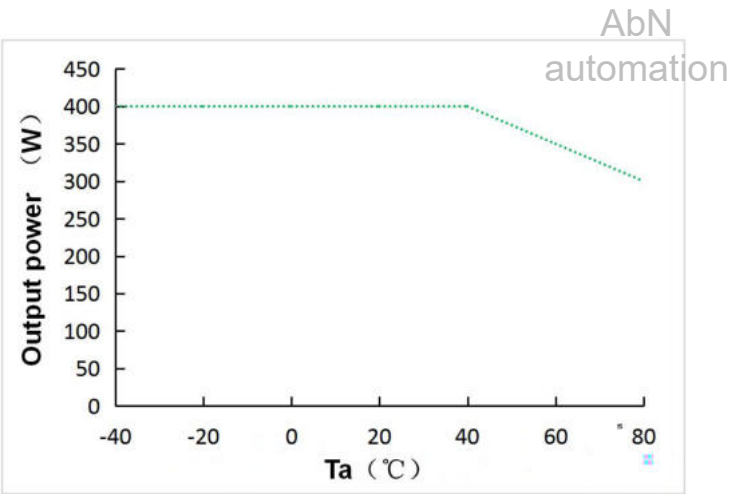


Lifetime VS T_a

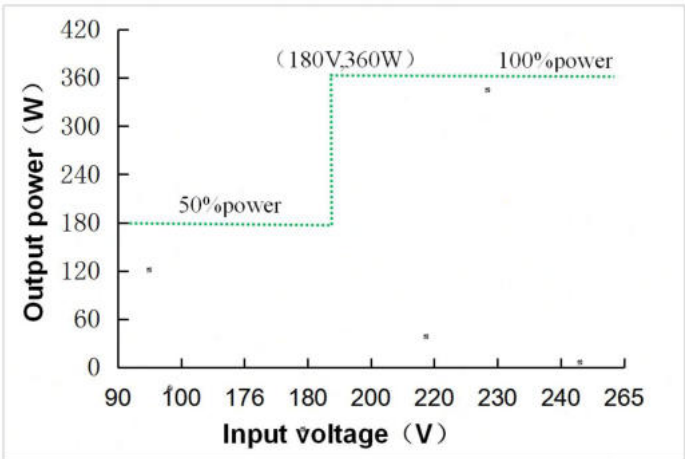
DL-400H-RAC Parametric curves



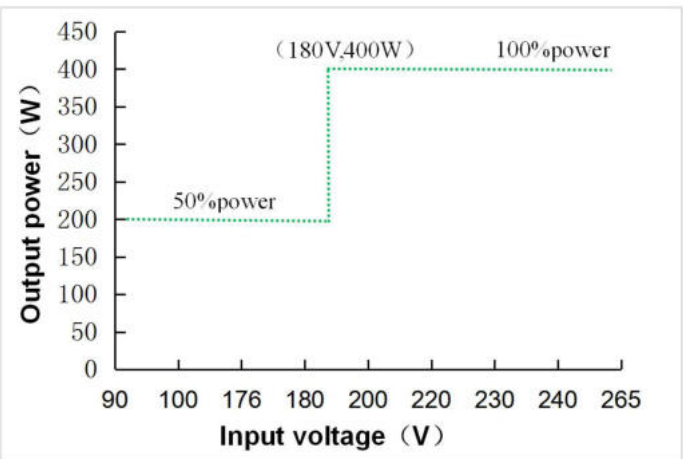
Output power VS Ta (V12)



Output power VS Ta (V24 V36 V48)



Output power VS Input voltage(V12)



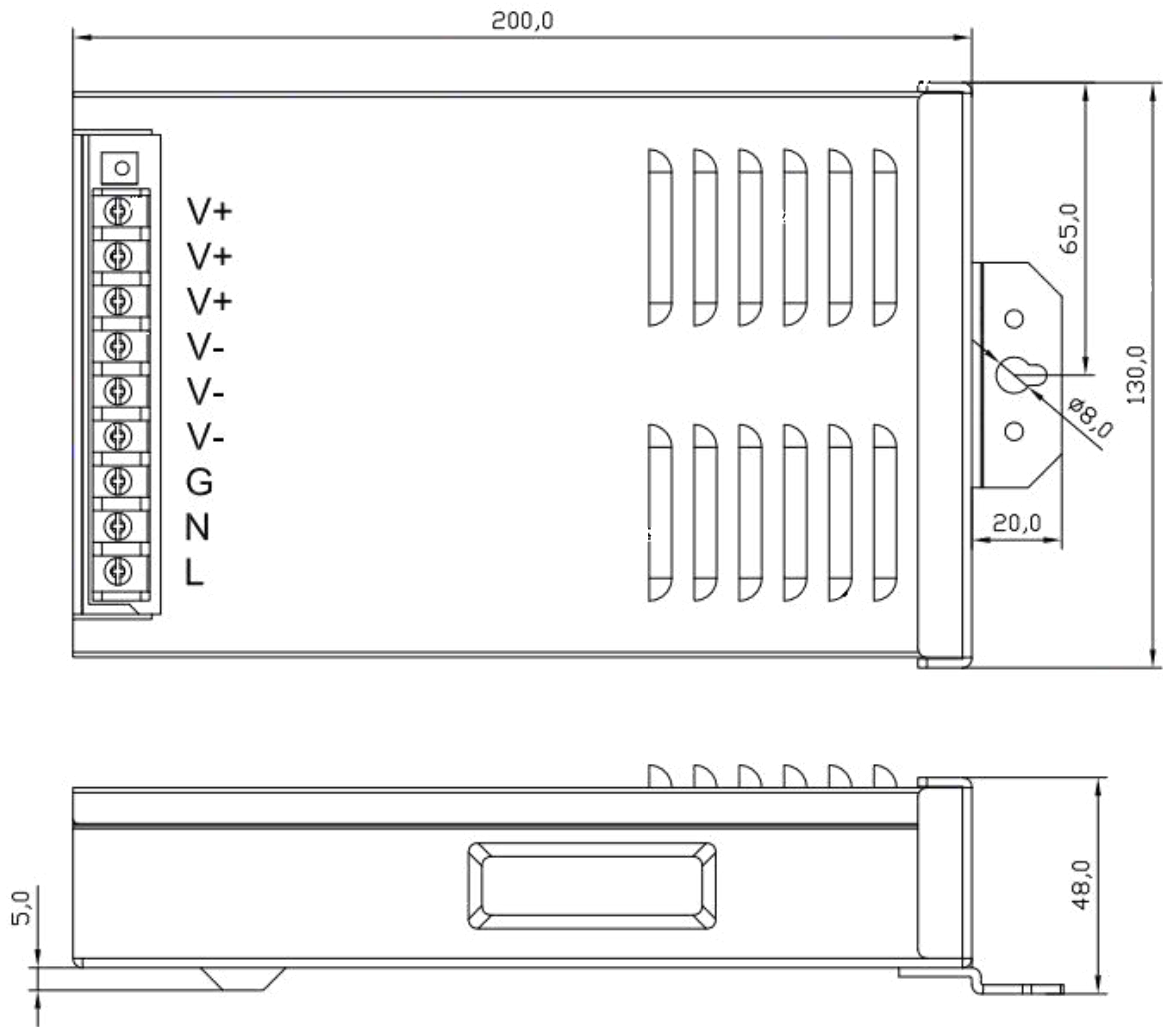
Output power VS Input voltage(V24 V36 V48)

Note: If the input voltage is lower than 90Vac, the output power off.

Mechanical specification

Size (mm)	L220mm*W130mm*H48mm	1.15KG
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DL-400H-RAC

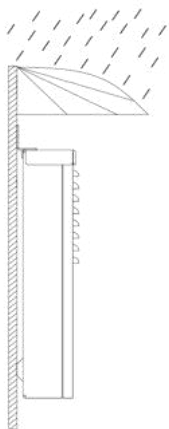


Installation drawing

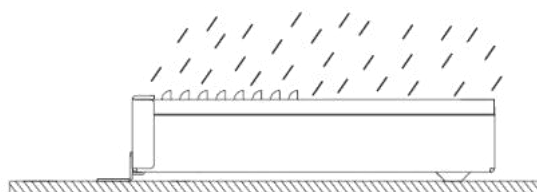
1.DL-400H-RAC is an outdoor design, please install in a sheltered area.

2.The DL-400H-RAC is suitable for vertical wall-mounted mounting. Leaning forward, recline or horizontal is not allowed.

AbN
automation



Proper installation

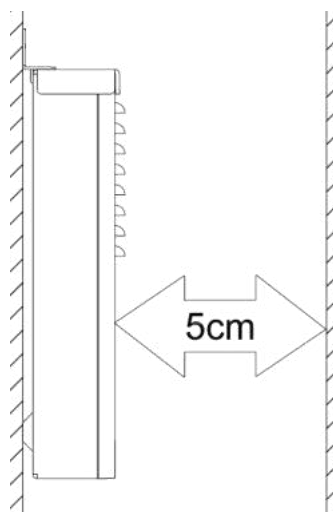
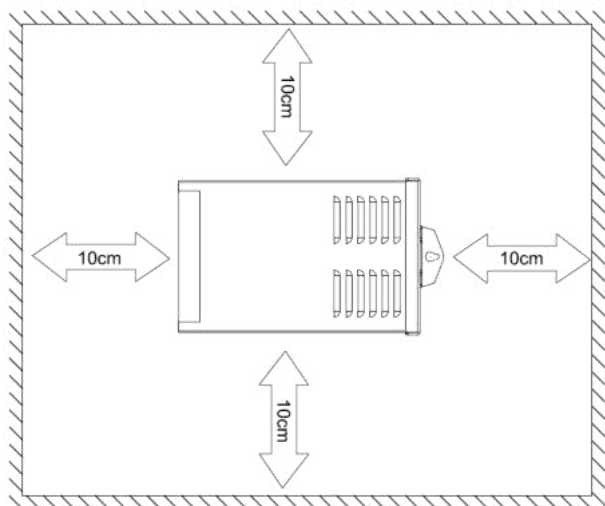


Incorrect installation



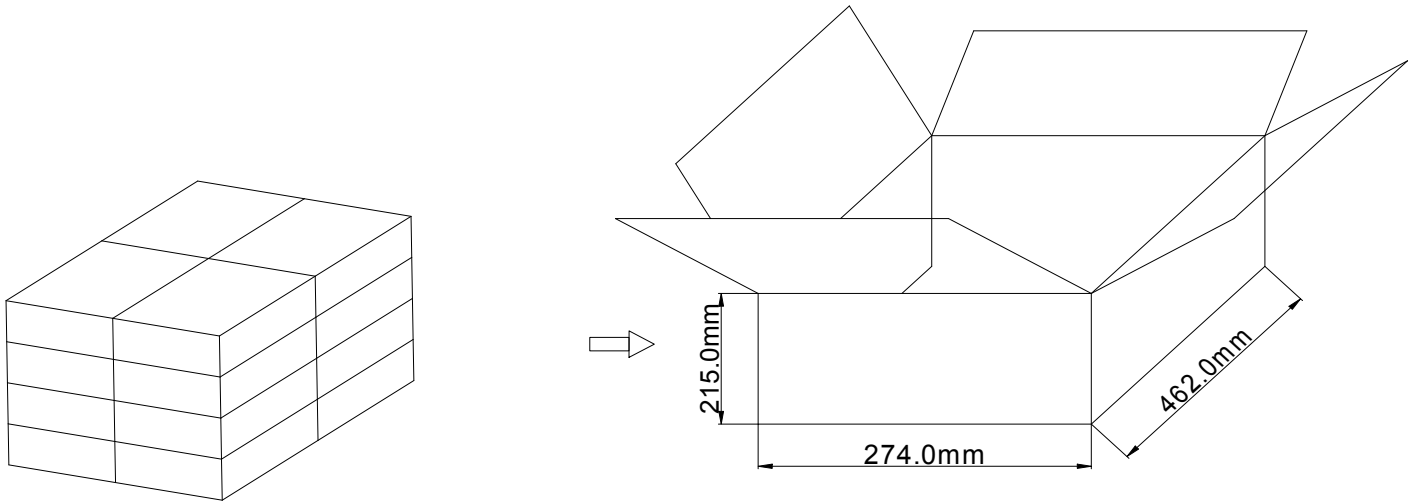
Incorrect installation

3.To ensure good heat dissipation, reserve enough space when selecting the installation location. The recommended installation diagram is as follows:



Packaging

Packaging (mm) L462*W274*H215



Note: One Carton 4 layers and 4pcs each layer, total 16pcs/carton.

Note:

1. The LED DRIVER with Chinese label is only used for China market.

Version

DATE	DESCRIPTION	REV.	CHECK	AbN
2023.12.08	Initial version.	V1.0		automation
2024.03.04	V12 Parameter graph update	V1.1		

MANUFACTRUER		
EDIT	CHECK	APPROVE