

Revision History/变更履历表

Rev.	Date	Revision Description	Reviser	Customer Approval	Approval Date
V1.0	2016.09.09	First Release./第一次发行	Anna Xiao		
V2.0	2017.11.07	1. Add the Safety and EMC Compliance/新增安规及EMC标准; 2. Update the Label Drawing/更新标签图纸; 3. Update the Mechanical 2D Drawing /更新2D机构图;	Anna Xiao		
V3.0	2018.01.04	1. Add the Safety and EMC Compliance/新增安规及EMC标准; 2. Update the Leakage Current/更新漏电流; 3. Update the Rated input voltage /更新额定输入电压 4. Update the Label Drawing/更新标签图纸; 5.Update the Mechanical 2D Drawing /更新2D机构图;	Anna Xiao		
V4.0	2018.02.01	1. Update the Safety Standards /更新安规标准; 2. Update the Label Drawing /更新标签图纸 3. Update the Environmental /更新环境要求	Anna Xiao		
V5.0	2018.03.28	1. Update the Package Drawing/更新包装外观图;	Anna Xiao		
V6.0	2019.01.24	1. Update the Safety Standards /更新安规标准;	Shelly Kuang		
V7.0	2019.04.30	1. Update the Label Drawing/更新标签图纸	Shelly Kuang		

Table Of Content/目录

1. Scope /简述	4
2. Input Characteristics /输入特性	4
2.1. Input Conditions/输入条件	4
2.2. Line Voltage Surge and Brownout/输入电压浪涌和掉电	4
2.3. Inrush Current(Cold Start) /浪涌电流（冷启动）	4
2.4. Power Efficiency(Normal) /效率（额定输入）	4
3. Output Characteristics /输出特性	5
3.1. Output Conditions/输出条件	5
3.2. Ripple & Noise(pk-pk)/纹波&噪声(pk-pk)	5
3.3. Line regulation/线性调整率	5
3.4. Load regulation/负载调整率	5
3.5. Turn on delay time/开机延迟时间	5
4. Protection /电源保护功能	5
4.1. Over Voltage Protection /过压保护	5
4.2. Over Current Protection /过流保护	6
4.3. Short Circuit Protection /短路保护	6
4.4. Over Temperature Protection /过温保护	6
5. Safety and EMC Compliance 安规及 EMC 标准	6
5.1. Safety Standards/安规标准	6
5.2. EMI Standards/ EMI 标准	6
5.3. EMS Standards/ EMS 标准	7
6. Dielectric Strength (Hi-pot)/介电耐压强度（高压）	7
6.1. Leakage Current/漏电流	8
6.2. Ground Resistance/接地阻抗	8
7. Derating Curve/降额曲线	8
8. Environmental /环境要求	9
8.1. Temperature/温度	9
8.2. Humidity/湿度	9
9. Reliability /可靠性	9
9.1. Burn-in/老化	9
9.2. MTBF Qualification/平均间隔故障时间估算	9
9.3. Life/寿命	9
10. Label Drawing/标签图纸	10
11. Mechanical 2D Drawing /2D 机构图	11
12. Package Drawing/包装外观图	12

1. Scope / 简述

The power supply described here is a 150W AC/DC CV LED driver with (4170mA/36V)*1 output. This unit is designed to meet the relevant safety and EMC regulations. The power supply shall meet the RoHS requirement.

此款为150W单路输出(4170mA/36V)恒压电源。设计符合安规和EMC标准。此款电源符合RoHS要求。

2. Input Characteristics / 输入特性

2.1. Input Conditions / 输入条件

Rated input voltage / 额定输入电压	100-240Vac
Operating range / 输入电压范围	90-305Vac
Rated input frequency / 额定输入频率	50/60Hz(+/-3Hz)
Input power / 输入功率	161W _{Typ.} @220Vac
Input current / 输入电流	0.748A _{Typ.} @220Vac
Power Factor / 功率因数	≥0.9@100-240Vac,50-60Hz,100%load
THD / 总谐波失真	≤20%@100-240Vac,50-60Hz,100%load

2.2. Line Voltage Surge and Brownout / 输入电压浪涌和掉电

Surge / 浪涌

With the PSU operating at minimum and maximum load, the power supply shall survive at the input surge voltage of 330Vac for 60 seconds.

电源可承受最大输入电压330Vac，60秒不损坏。

AC Line Brownout / AC 输入电压掉电

The PSU shall not be damaged under 90Vac input voltage in short using time.

输入电压短时低于90Vac时，电源不损坏。

2.3. Inrush Current (Cold Start) / 浪涌电流（冷启动）

1.5 A²s max. @ 220Vac input, 25°C cold start, duration=1.2ms, 10%Ipk-10%Ipk.

1.5 A²s max. @ 220Vac, 25°C（冷机启动），10% Ipk -10% Ipk，持续时间=1.2ms。

2.4. Power Efficiency (Normal) / 效率（额定输入）

89% min. (90% typ.) Measured at full load, 110Vac input, 25°C ambient temperature, after the unit is thermally stabilized. It will be about 1% lower, if measured immediately after startup.

89% min.（典型值90%）@ 110Vac，满载，25°C环温，电源热机后。冷机启动时效率降低约1%。

92% min. (93% typ.) Measured at full load, 220Vac input, 25°C ambient temperature, after the unit is thermally stabilized. It will be about 1% lower, if measured immediately after startup.

92% min. (典型值93%) @ 220Vac, 满载, 25°C 环温, 电源热机后。冷机启动时效率降低约1%。

Note: All the above specifications are tested at 25°C ambient temperature unless otherwise stated.
注：以上所有规格都是25°C 环温测试, 除非另有说明。

3. Output Characteristics /输出特性

3.1. Output Conditions/输出条件

Number of output channel/输出路数	1
Rated output current /额定输出电流	4170mAmax.
Rated output voltage /额定输出电压	36V±5%
Rated output power/额定功率	150Wmax.

3.2. Ripple & Noise(pk-pk)/纹波&噪声(pk-pk)

2%Vo max. (measured at 20MHz bandwidth and the output is paralleled with a 0.1uF ceramic capacitor and a 10uF electrolysis capacitor)

2%Vo max.(测试时示波器设置为 20M 带宽, 输出端并联一个 0.1uF 的陶瓷电容和一个 10uF 的电解电容)。

3.3. Line regulation/线性调整率

The line regulation is less than 1% when the line voltage changing from minimum input voltage to maximum input voltage @ 100%load.

≤1% @从最小输入电压变化为最大输入电压满载测试。

3.4. Load regulation/负载调整率

The load regulation for output voltage is less than 2% when load current changing from minimum output current to rated output current.

≤2% @从最小输出电流变化为额定输出电流。

3.5. Turn on delay time/开机延迟时间

Less than 1500mS at rated input voltage 110-240Vac and full load.

≤1500mS@额定输入电压 110-240Vac&满载。

Note: All the above specifications are tested at 25°C ambient temperature unless otherwise stated.
注：以上所有规格都是 25°C 环温测试, 除非另有说明。

4. Protection /电源保护功能

4.1. Over Voltage Protection /过压保护

The unit will go into OVP protection when the OVP trigger voltage exceeds OVP point. Limits output voltage at no load and in case the normal voltage limit fails.

产品过压时, 电源会启动 OVP 保护功能。输出电压会限制在规定范围内。

4.2. Over Current Protection /过流保护

Hiccup mode. The power supply shall be self-recovery when the fault condition is removed.

打嗝模式。故障排除时，自动恢复。

4.3. Short Circuit Protection /短路保护

When the output is shorted, and the power supply shall not be damaged, and shall be recovered after the fault condition is removed.

短路时，产品无损伤。短路解除后，可自动恢复。

4.4. Over Temperature Protection /过温保护

The power supply shall go into thermal protection as the internal temperature of the unit exceeds internal limitation. The output shall be auto recovery when the temperature becomes normal.

电源内部实际温度超过内部限定温度时会启动过温保护。温度正常时，输出自动恢复。

5. Safety and EMC Compliance 安规及 EMC 标准

5.1. Safety Standards/安规标准

Safety category/安规	Country/国家	Standard/标准
CE	Europe	EN60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
UL/CUL	USA & Canada	UL 60950-1,2 nd Edition & CAN/CSA C22.2 No.60950-1-07, 2 nd Edition
TUV	Germany	EN60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
CCC	China	GB4947.1-2011
KC	Korea	K60950-1(2011-12)
CB	International	IEC 60950-1(ed.2),IEC 60950-1(ed.2); am1, IEC 60950-1(ed.2); am2
BIS	India	IS 13252(Part 1):2010

5.2. EMI Standards/ EMI 标准

Standards/标准	Description of item /项目描述	Class/等级	Test conditions/测试条件
EN 55032:2015	Conducted Disturbance at Mains terminals	Class B	120V/220Vac 带功率电阻满载、半载； 外壳接地、负载接地与不接地两种状态

EN 55032:2015	Radiated Disturbance	Class B	120V/220Vac 带功率电阻满载、半载 外壳接地、负载接地与不接地两种状态
EN 61000-3-2:2014	Harmonic Current Emissions	Class A	120V/220Vac 带功率电阻满载
EN 61000-3-3:2013	Voltage Fluctuation and Flicker	--	

5.3. EMS Standards/ EMS 标准

Standards/标准	Description of item /项目描述	Performance Criteria /性能指标	Test conditions/测试条件
EN 55024:2010+A1:2015 (IEC 61000-4-2:2008)	Electrostatic Discharge: 15 kV air discharge, 8 kV contact discharge	A	带功率电阻满载、半载； 外壳接地、负载接地与不接地两种状态
EN 55024:2010+A1:2015 (IEC 61000-4-3:2006+A1:2007+A2:2010)	Radio-Frequency, Continuous Radiated Disturbance 3V/m	A	带功率电阻满载、半载； 外壳接地、负载接地与不接地两种状态
EN 55024:2010+A1:2015 (IEC 61000-4-4:2012)	EFT/B Immunity 2KV	A	带功率电阻满载、半载； 外壳接地、负载接地与不接地两种状态
EN 55024:2010+A1:2015 (IEC 61000-4-5:2014)	Surge Immunity Test: AC Power Line: line to line 4 kV, line to earth 6 kV	A	带功率电阻满载、半载； 外壳接地、负载接地与不接地两种状态
EN 55024:2010+A1:2015 (IEC 61000-4-6:2013)	Conducted RF Immunity	A	带功率电阻满载、半载； 外壳接地、负载接地与不接地两种状态
EN 55024:2010+A1:2015 (IEC 61000-4-8:2009)	Power Frequency Magnetic Field	A	带功率电阻满载、半载； 外壳接地、负载接地与不接地两种状态
EN 55024:2010+A1:2015 (IEC 61000-4-11:2004)	Voltage Dips,50%UT	B(输出电压波动在±10%范围以内)	UT=240Vac 带功率电阻满载、半载； 外壳接地、负载接地与不接地两种状态

6. Dielectric Strength (Hi-pot)/介电耐压强度（高压）

a) Input-Output:3000Vac/10mA/60s is guaranteed(In the process of manufacturing testing time for 1s.) ,when the nut and gasket is dismantled.

输入-输出: 3000Vac/10mA/60s(生产时高压测试时间:1s), 拆除六角螺母和接地垫片。

b) Input-Earth:2100Vac/5mA/60s is guaranteed(In the process of manufacturing testing time for 1s.) ,when the nut and gasket is dismantled.

输入-地: 2100Vac/5mA/60s(生产时高压测试时间:1s), 拆除六角螺母和接地垫片。

c) Output- Earth: 1500Vac/5mA/60s is guaranteed(In the process of manufacturing testing time for 1s.) ,when the nut and gasket is dismantled.

输出-地: 1500Vac/5mA/60s(生产时高压测试时间:1s), 拆除六角螺母和接地垫片。

Note: Make sure the metal case reliable and permanent connection of the earth before use.

注: 使用之前需确保金属外壳永久和可靠接地。

6.1. Leakage Current/漏电流

0.25 mA max(Output-GND) @264Vac/60Hz.

0.25 mA max(输出-地) @264Vac/60Hz.

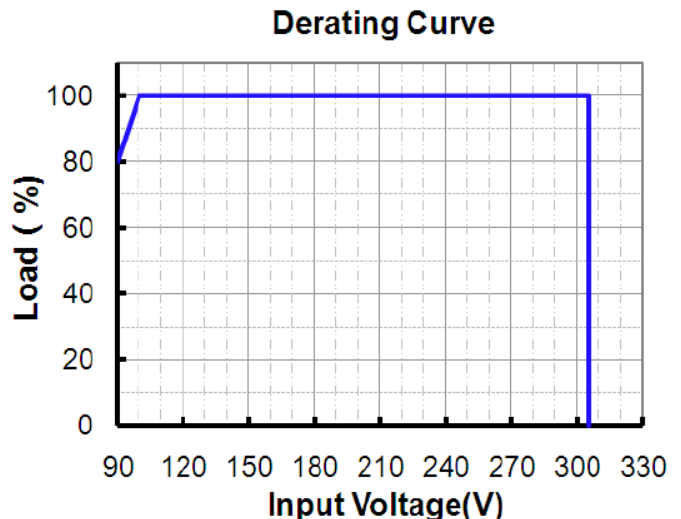
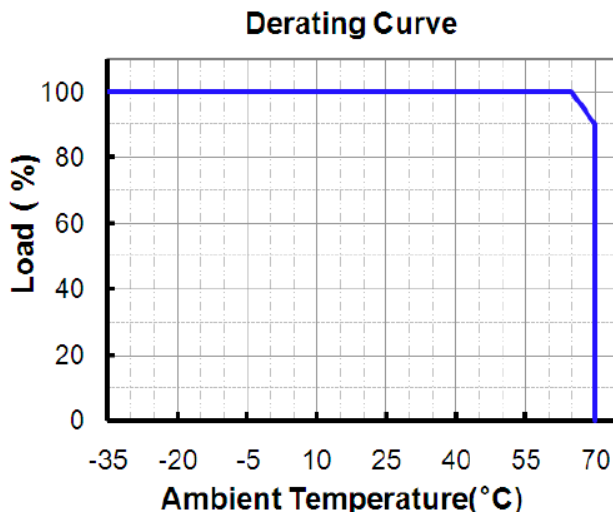
0.5 mA max(Metal Case-GND)@264Vac/60Hz.

0.5 mA max(金属外壳-地)@264Vac/60Hz.

6.2. Ground Resistance/接地阻抗

0.1Ω max. 32A, 3S.

7. Derating Curve/降额曲线



8. Environmental /环境要求

8.1. Temperature/温度

Condition/条件	Minimum/最小	Maximum/最大	Unit/单位
Operating Ambient Temperature /工作环境温度	-40	+50	°C
Storage Temperature /储藏温度	-40	+70	°C

Note: Metal Chassis could not be touch when normal working, especially under the condition of max loads and max operating temperature.

注：金属部分在正常工作时，尤其是在满负荷及其最大环境温度使用时，不能被触摸。

8.2.Humidity/湿度

Condition/条件	Minimum/最小	Maximum/最大	Note/备注
Operating Humidity /工作湿度	10%RH	90%RH	@No Condensation /无冷凝
Storage Humidity /储藏湿度	5%RH	90%RH	@No Condensation /无冷凝

9. Reliability /可靠性

9.1. Burn-in/老化

The power supply unit shall undergo a minimum of 4 Hours burn-in test at 45°C ±5°C at full load.

产品至少要在 45°C ±5°C 的环境及满载条件下老化 4 小时。

9.2. MTBF Qualification/平均间隔故障时间估算

The typical MTBF shall be 260,900hours at 110Vac input, 80%Load and 25°C Ambient Temperature (MIL-HDBK-217F).

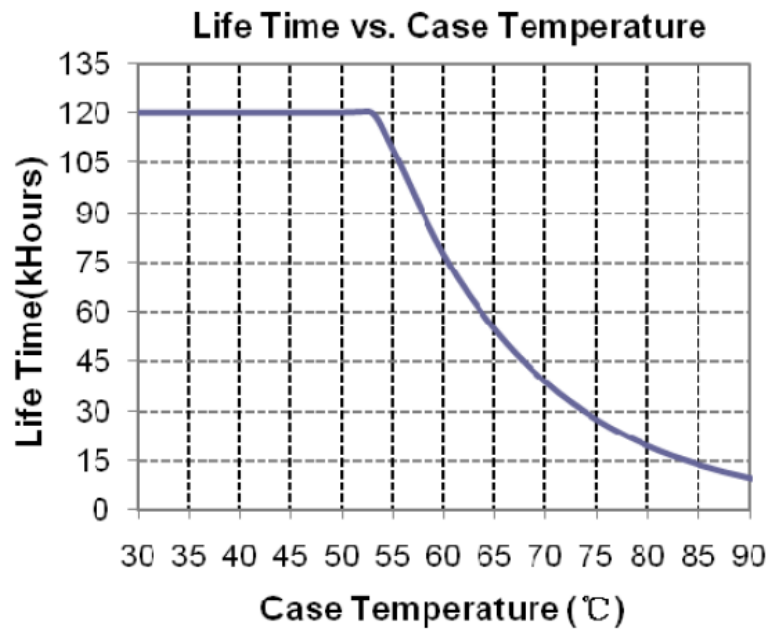
典型值 260,900 小时@110Vac ,80%负载，25°C 环温。

9.3. Life/寿命

The typical Life shall be 77,200 hours at 220Vac input, 80%Load; Case temperature=60°C @ Tc point. See life time vs. Tc curve for the details.

典型值 77,200 小时@220Vac ,80%负载，60°C 壳温。

Life Time vs. Case Temperature Curve/寿命 vs.壳温曲线:



10. Label Drawing/标签图纸



12. Package Drawing/包装外观图

Typical Carton Dimension (L x W x H)/参考包材尺寸	490x300x305mm
Pulp Tray /纸浆托盘	4pcs/carton
Shield Board /平卡	4pcs/carton
LED Drivers/LED驱动器	18pcs/carton

