

# SPECIFICATION FOR APPROVAL

CUSTOMER : \_\_\_\_\_

CUSTOMER P. N. : \_\_\_\_\_

PRODUCT MODEL : \_\_\_\_\_ JAEU-C-040S105DS \_\_\_\_\_

PRODUCT NO. : \_\_\_\_\_

SAMPLE DATE : \_\_\_\_\_

CUSTOMER AUTHORIZED SIGNATURE		

Please return to us one copy of "SPECIFICATION FOR APPROVAL" with you approved signature.

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## Revision History

Rev.	Description of Change		Changed Date	Notes
	Before	After		
A/0	Original Release	---	2013-07-24	---

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## 1. Scope

The document detail the electrical, mechanical and environmental specifications of a 40W constant current LED driver. The LED driver shall meet the RoHS requirement.

Description:

- LED driver (With AL Case)                       LED driver (With Plastic Case)  
 Open Frame     Others

## 2. Input Characteristics

### 2.1. Input Voltage & Frequency

The range of input voltage is from 90 to 305Vac single phase.

Items	Minimum	Nominal	Maximum
Input Voltage	90Vac	100-277Vac	305Vac
Input Frequency	47Hz	60Hz/50Hz	63Hz

### 2.2. Input AC Current

0.48Amax. @ 100-277Vac input & full load.

### 2.3. Inrush Current (cold start)

65Amax. @ 230Vac input, 25°C.

### 2.4. Power Factor

Typical value is 0.95@110Vac input &100% load;

Typical value is 0.90@220Vac input &100% load.

### 2.5. Efficiency

Typical value is 84% @110Vac input & full load;

Typical value is 84% @220Vac input & full load.

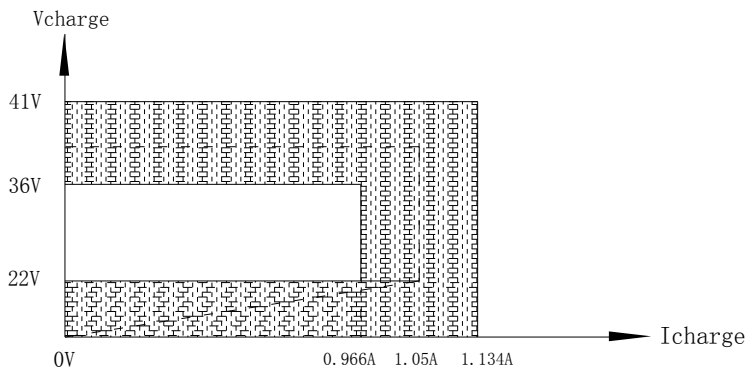
## 3. Output Characteristics

### 3.1. Static Output Characteristics <Vo & R&N<5000mVp-p >

Ripple & Noise: Measurement is done by 20MHz bandwidth oscilloscope and the output paralleled a 0.1uF ceramic capacitor and a 10uF electrolysis capacitor.

(test under the condition of rated input and rated output)

### 3.2. Voltage/Current Curve



Constant Current Output Characteristics	Min.	Typ.	Max.
Output Current Range	0.966A	1.05A	1.134A
Output Voltage Range	22V	/	36V

### 3.3. Turn - on Delay Time

1.0S typical @ 100-277Vac input & full load.

## 4. Protection Requirements

### 4.1. Short Circuit Protection

The input power shall decrease when the output rail short, the power supply shall no damage, and shall be self-recovery when the fault condition is removed.

### 4.2. Over Voltage Protection

When the output voltage is over (1.2-1.4)  $V_{out}$ , the product will shutdown and enter protection status, the driver will re-start and work normally if the fault condition was eliminated.

## 5. Environment Requirements

### 5.1. Operating Temperature and Relative Humidity

-25°C to +50°C;  
5%RH to 95%RH.

### 5.2. Storage Temperature and Relative Humidity

-35°C to +70°C;  
5% to 95%RH non-condensing at Sea level shall be low 10,000 feet.

### 5.3. Vibration

10 to 300Hz sweep at a constant acceleration of 1.0G (Breadth: 3.5mm) for 1Hour for each of the perpendicular axes X, Y, Z.

## 6. Reliability Requirements

### 6.1. Life Time Qualification

The life time shall be at least 3 years at 110Vac input, 80% load and 45°C ambient temperature.

### 6.2. MTBF Qualification

The MTBF shall be at least 490,000 hours at 110Vac, 80% load and 25°C ambient temperature (MIL-HDBK-217F).

## 7. Safety & EMI/EMS Standards

### 7.1. Safety Category

Safety Category	Country	Standard
CUL	USA & Canada	UL8750, UL935, UL1012, UL1310 Class 2, CSA-C22.2 No. 107.1, CSA C22.2 No. 223-M91 Class 2
CE	Europe	EN 61347-1, EN 61347-2-13

### 7.2. EMI Standards

EMI Standards	Country	Notes
EN 55015	Europe	Conducted emission Test & Radiated emission Test with 6 dB margin
FCC	USA	FCC Part 15 class B, ANSI C63.4:2009

### 7.3. EMS Standards

EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EN 61000-4-2	Electrostatic Discharge(ESD): 8kV air discharge, 4kV contact discharge
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
EN 61000-4-4	Electrical Fast Transient / Burst-EFT
EN 61000-4-5	Surge Immunity Test: AC Power Line: line to line 1 kV
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips
EN 61547	Electromagnetic Immunity Requirements Applies To Lighting Equipment

### 7.4. Energy Star Standards

Energy Star Standards	Notes
ANSI / IEEE C62.41-1991	Transient protection, power supply shall comply with Class A operation. The line transient shall consist of seven strikes of a 100kHz ring wave, 2.5kV level, for both common mode and differential mode

8. Main Safety Test Items

8.1. Dielectric Strength(Hi-pot)

Primary to Secondary: 3750Vac 10mA Max / 60second(3second for production)/Finished goods

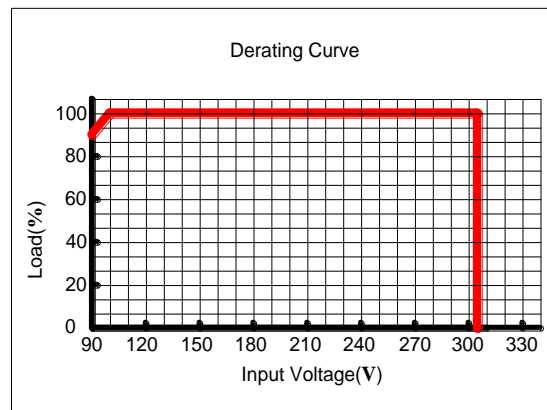
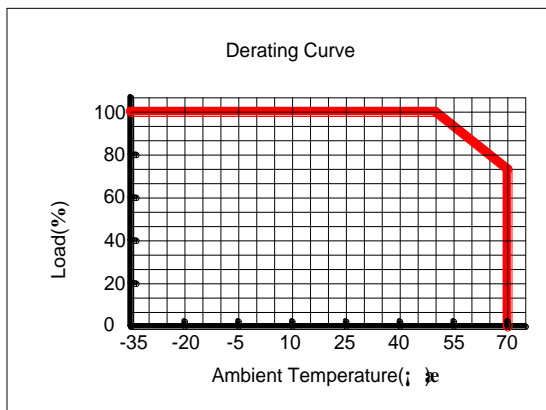
8.2. Leakage Current

0.5mA max. at 230Vac/50Hz input.

8.3. Insulation Resistance

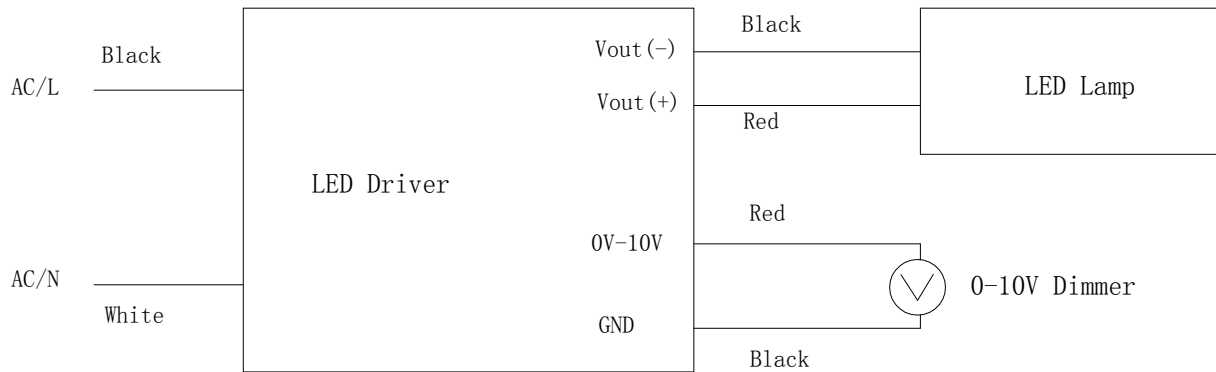
The IR shall be at least 50MΩ when apply 500Vdc between primary and secondary.

9. Derating Curve



## 10. Dimming Explain

10.1. Dimming sketch map shown as following

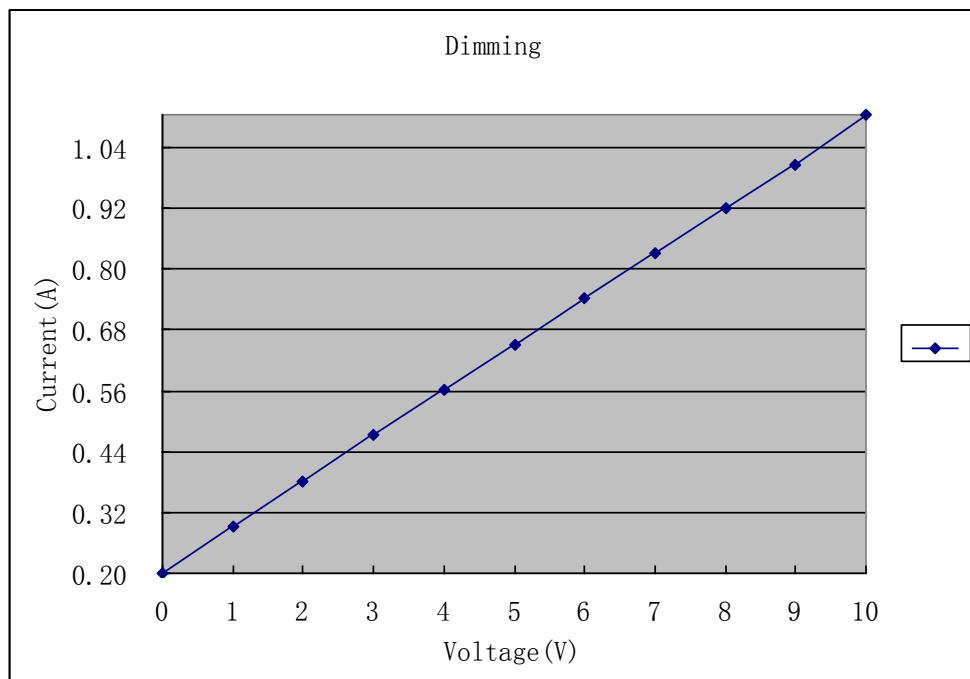


### Notes:

1. A 0-10V dimmer connected to DIM Port for achieving 20-100% brightness dimming by changing the voltage(0-10V) of IsenPse .
2. One LED driver, one brightness controller control one LED lamp only.

10.2. Dimming Voltage/Current Proportion Curve:

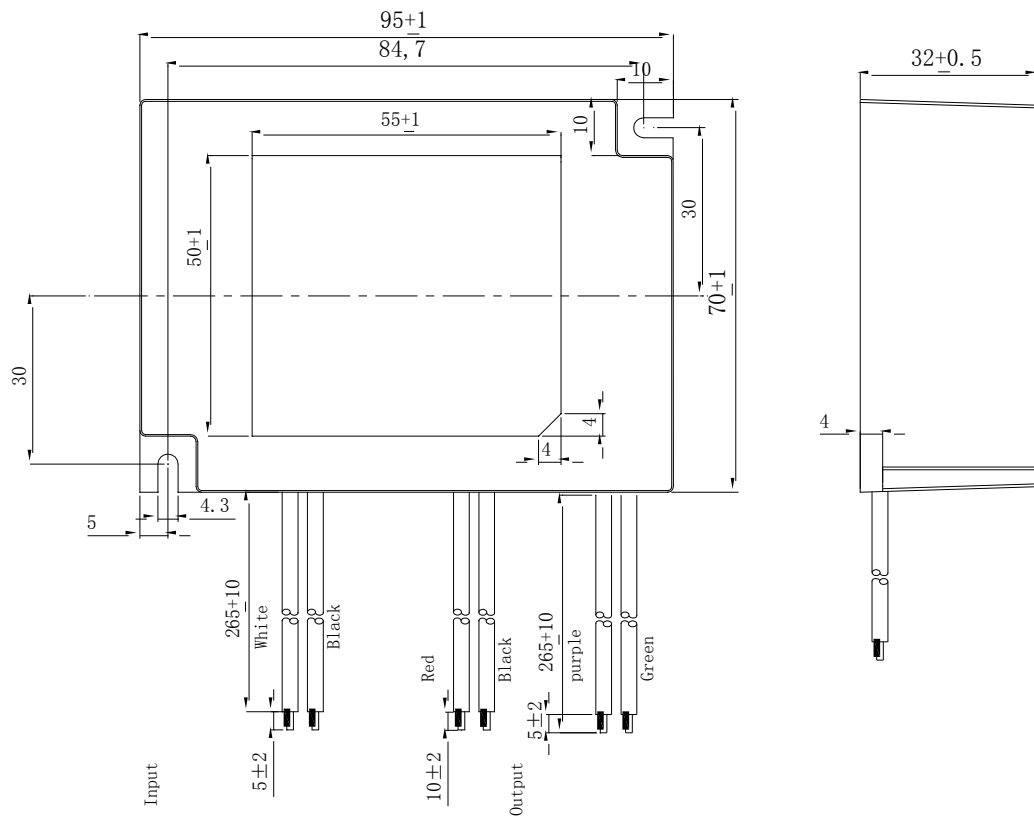
Dimming Voltage (V)	0	1	2	3	4	5	6	7	8	9	10
Dimming Current (A)	0.195	0.286	0.377	0.468	0.558	0.647	0.738	0.827	0.915	1.002	1.1





11. Mach. Outline Drawing

1. Tolerance: unmarked tolerance all is  $\pm 0.5$ , marked according to tolerance of it
2. Unit/单位: mm



Dimensions	Millimeters (Inches)
Length	95 (3.74)
Width	70 (2.76)
Height	32 (1.26)

Wire	Specification
AC Input/输入	UL1672 18AWG
DC Output/输出	UL1015 18AWG
Dimming/调光	UL1569 22AWG

12. I/O Marking Drawing