Test Report

FL-YE-01W0100V144V01-CENTURY-100W-YT2181GTE5





Features

- Wide Input Voltage Range: 100-440 Vac

- High Surge Capability: 4 kV

- High Efficiency: ≥0.91% @ 230Vac

- High PF: 0.956@ 230Vac

- High Reliability with Multiple Protection: open, short, over temperature regulation, current dropping etc.

- High Integration for Low-Cost Design: no VCC cap, no COMP cap, no FB resistor

-Programmable Current Dropping At Both Low Line (e.g. <160 Vac) and High Line (e.g. > 280Vac) for Thermal and Reliability Performance

- Easy Manufacturing

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1 Specification

1.1 Input Spec

- Input Voltage: 100-440 Vac
- Input Frequency: 47-63 Hz

1.2 Output Spec

- Tpical Output Voltage: 144V
- Output Current: 610 mA±5%
- LED:24C6B-6VLED

2 Assessment Result

2.1 Behavior of Electricity @ 230Vac

-- Efficiency: ≥0.9%@full load

- Power Factor: 95.6%@full load
- THD: 28.53%@full load

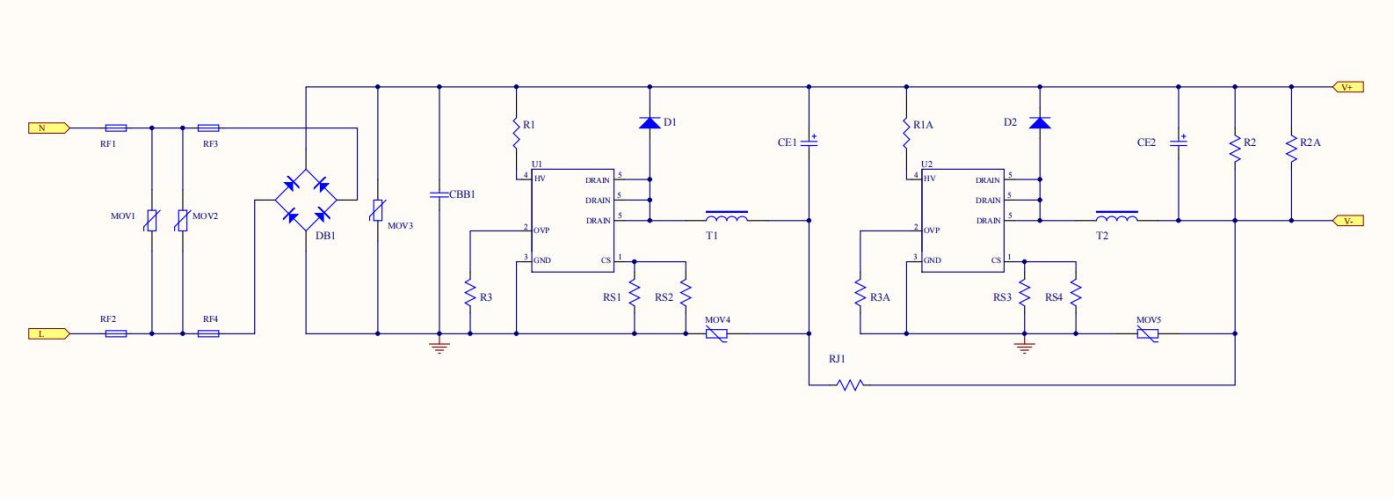
2.2 Defensive Function

-Short Circuit Protection: OK

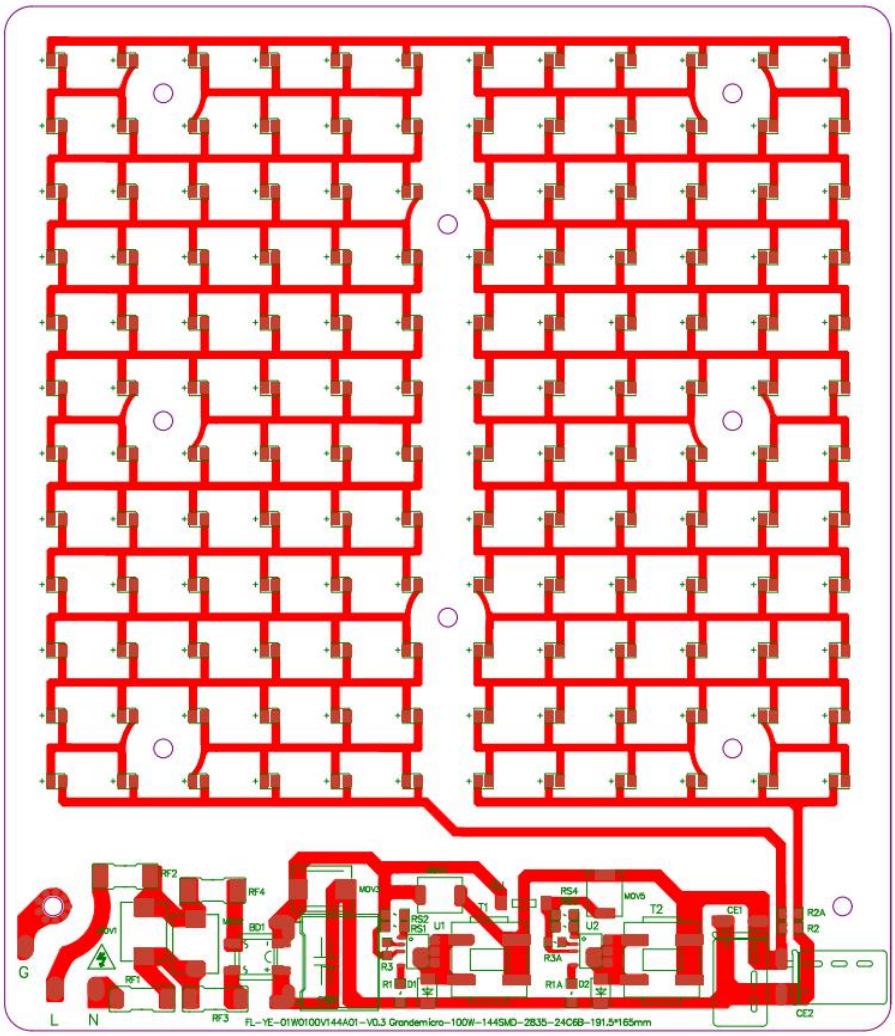
-Surge Level: 4 kV

3 LED Driver

3.1 Schematics



3.2 PCB Layout



3.3 BOM

Type	NO.	Name	Specification Description	Designator	Qty.	Unit
Driver SMD Components	1	MCPCB	MCPCB_FL-YE-01W0100V144A01-V0.3_Board size:191.5*165mm_RoHS		1/2	pcs
	2	SMD LEDS	LED_SMD2835_1W_6-6.6V_150mA_6500K±510K_Ra80_130-140LM_RoHS		144	pcs
	3	Rectifier Bridge	SMD Bridge_TMBF410_TMBF_1000V_4A_RoHS/MSB40M_UMSB_1000V_4A_RoHS	DB1	1	PCS
	4	SMD Diode	SMD Diode_ES2J_SMB_600V_2A_RoHS	D1,D2	2	pcs
	5	SMD Resistor	SMD Resistor_1206_20k±5%_RoHS	R1,R1A	2	pcs
	6	SMD Resistor	SMD Resistor_1206_220k±5%_RoHS	R2	1	pcs
	7	SMD Resistor	SMD Resistor_1206_1.0Ω±1%_RoHS	RS1,RS3	2	pcs
	8	SMD Resistor	SMD Resistor_1206_2.2Ω±1%_RoHS	RS2,RS4	2	pcs
	9	Patch jumper	Patch jumper_LS82_Size:8.2*2.2mm_Passement_RoHS	RJ	1	PCS
	10	SMD IC	SMD IC_YT2181GTE5_ESOP5	U1,U2	2	pcs
	11	SMD fuse resistor	SMD wire-wound resistance_RXF-0411_3WS_350V_2.2Ω± 5%_ROHS	RF1,RF2,RF3,RF4	4	pcs
	12	SMD Varistor	SMD Varistor_JQ4032K621G2_4032_RoHS	MOV1,MOV2,MOV3	3	PCS
	13	Film capacitor	CBB22_630V_680nF±10%_P=15mm_Z word molding 2.5mm_ROHS	CBB1	1	pcs
	14	SMD E-Cap	SMD E-CAP_160V_47UF±20%_Φ10*16.5_Right lying T-type_Passement_RoHS	CE1,CE2	2	pcs
	15	SMD Inductor	SMD Inductor_EE16-7_L_D4+4_F0.6mH_RoHS	T1,T2	2	pcs

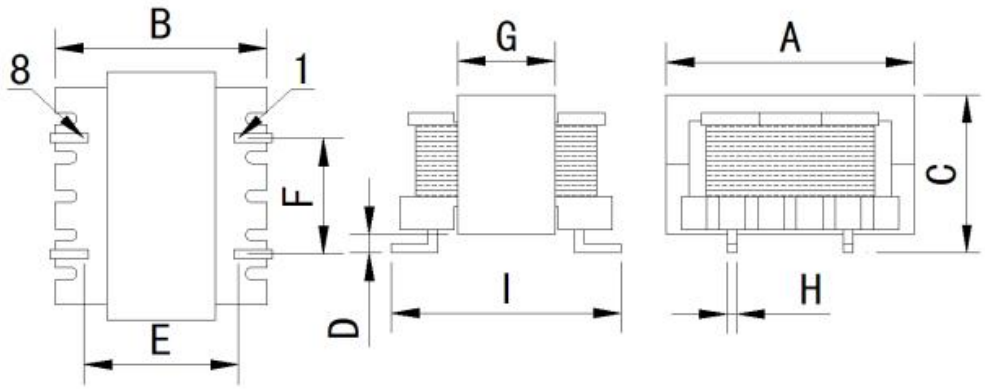
Interior Part	1	MCPCB screws	Yuan head screw_taper tapping (shrinking mouth)-M3*3-iron (nickel plating)		10	pcs
Enclosure Part	2	YE-01_lamp body	100W lamp body		1	pcs
	3	YE-01_lens	100W_lens		1	pcs
	4	YE-01 lens rubber ring (waterproof ring)	100W lens rubber ring (waterproof ring)		1	pcs
	5	YE-01 reflector	100Wreflecto		1	pcs
	6	YE-01 lens screw	Lens screw_Hexagon socket screw_M4*5-304		16	pcs
	7	YE-01 waterproof screw	Waterproof Screw_M12*1.5 Coarse Tooth-Galvanized(4 Piece Set: Nut+Screw+Flat Cone+Large Washer)		1	pcs
	8	Breathing valves	Breather valve_M12*1.5 (gray)		1	pcs
Bracket Part	9	YE-01 Bracket	100W bracket		1	pcs
	10	Support screws	Support screws_Outer hexagonal screws_M8*14-201		2	pcs
	11	Support gasket	Support spring pad_Spring pad-M8-201		2	pcs
	12	Support gasket	Support gasket_flat pad-M8-201		2	pcs

3.4 Transformer

- Iron Core: SMD EE16, PC40 or same texture

- Frame Diagram: SMD EE16 (4+4) vertical type

Overall dimension (unit: mm)



bottom view

A:17.2Max B:14.3Max C:10.7Max D:0.8±0.4 E:10±0.3 F:7.5±0.3 G:7±0.3 H:0.5±0.1 I:14.6±0.5

- Wire Wrapping:

Step	P-S	WIRE	TURNS (TS)	TAPE (TS)
P1	1→8	¢ 0.27mm *1 (Copper wire 180 degrees)	102.5T	/

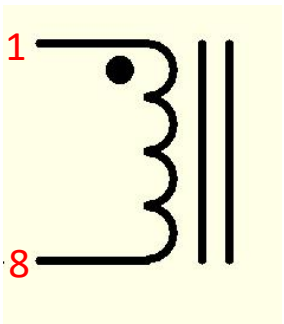
- Key Point:

1) Inductance Value L1-5: 0.6mH ±8% @ 10 kHz,1V

2) Inductor: vacuum dipping paint

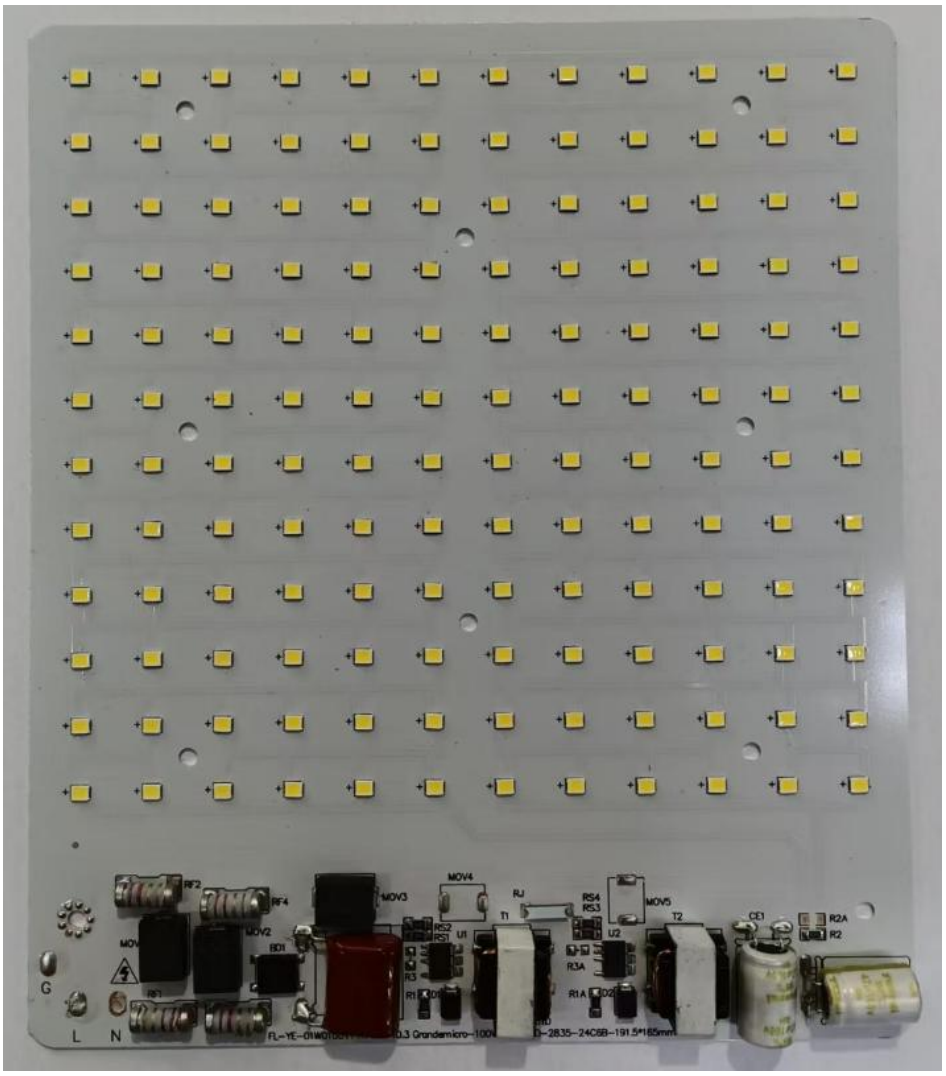
3) Pull out pins2,3,,6,7

- Schematic Diagram of the Inductor:



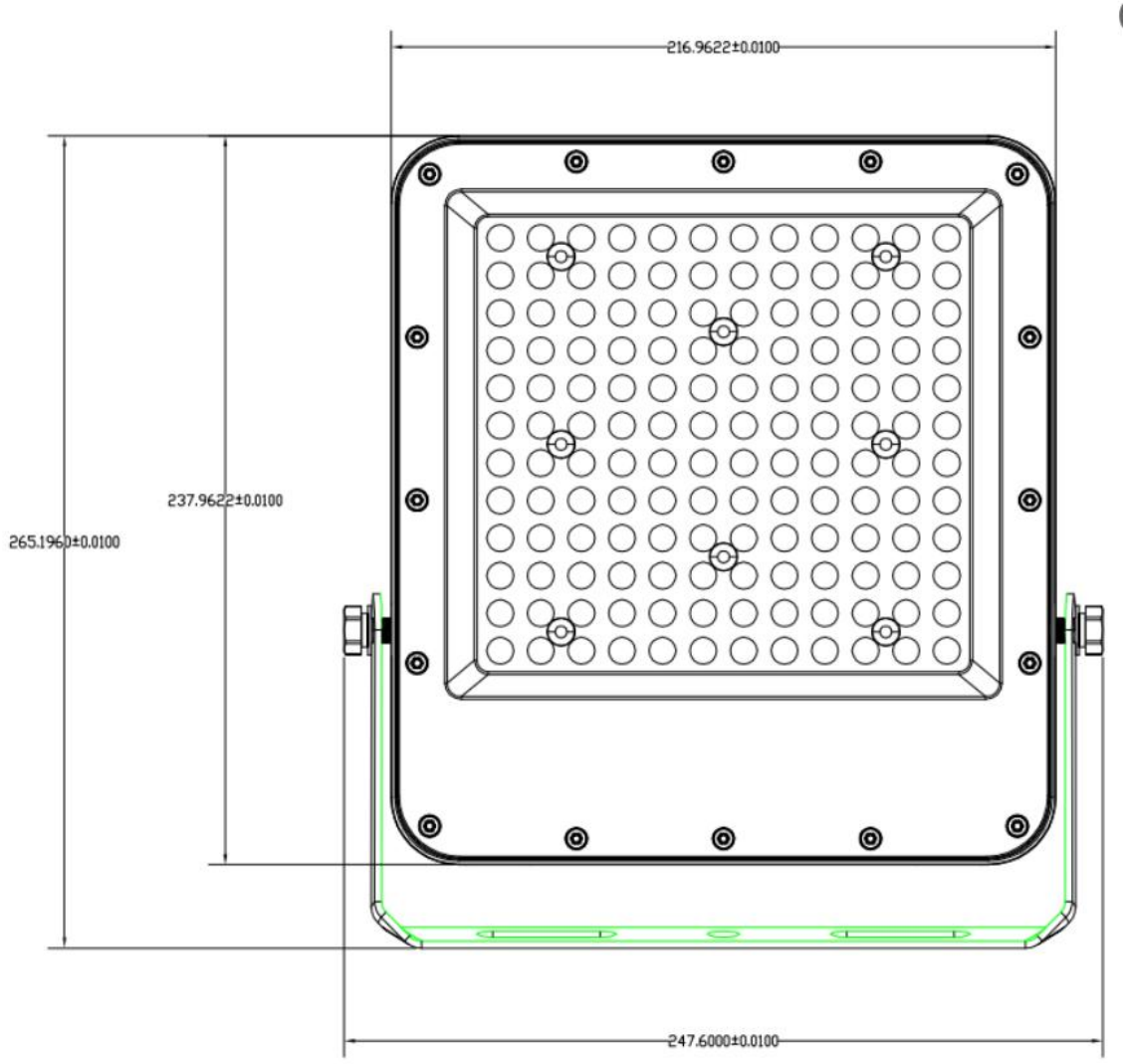
4 LED Driver Picture and Size

- L*W:191.5*165mm

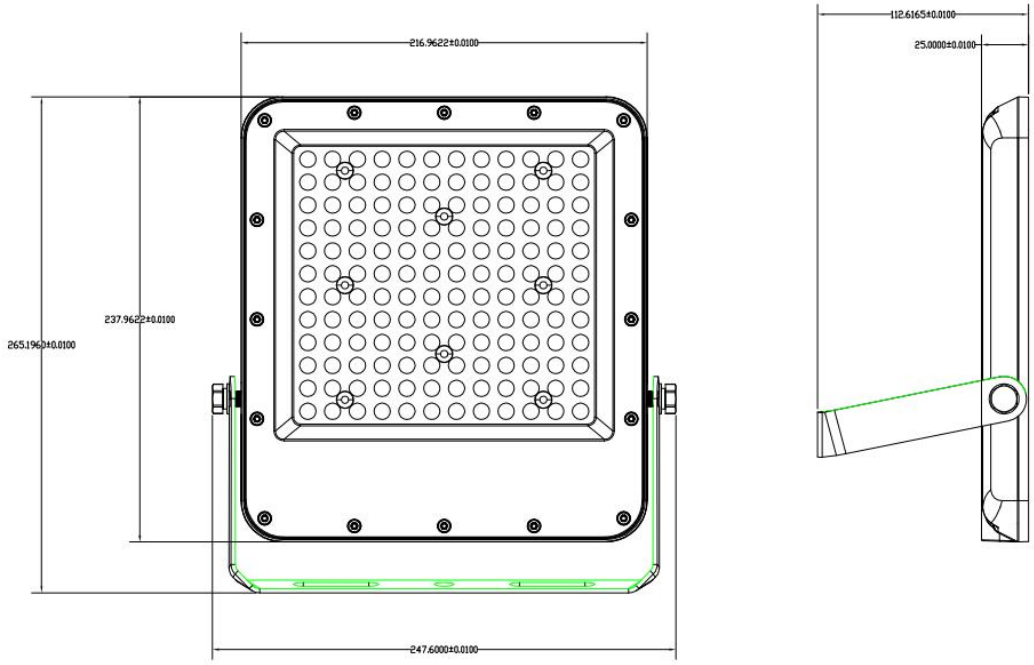


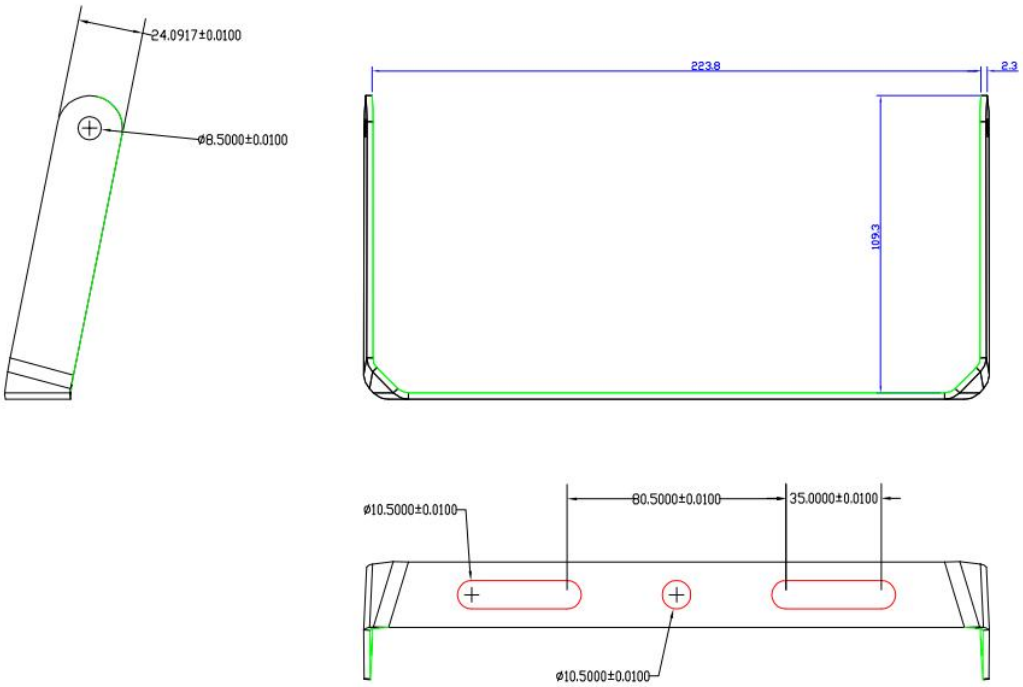
Top view

5 Product size drawing



6 Dimensional installation drawing



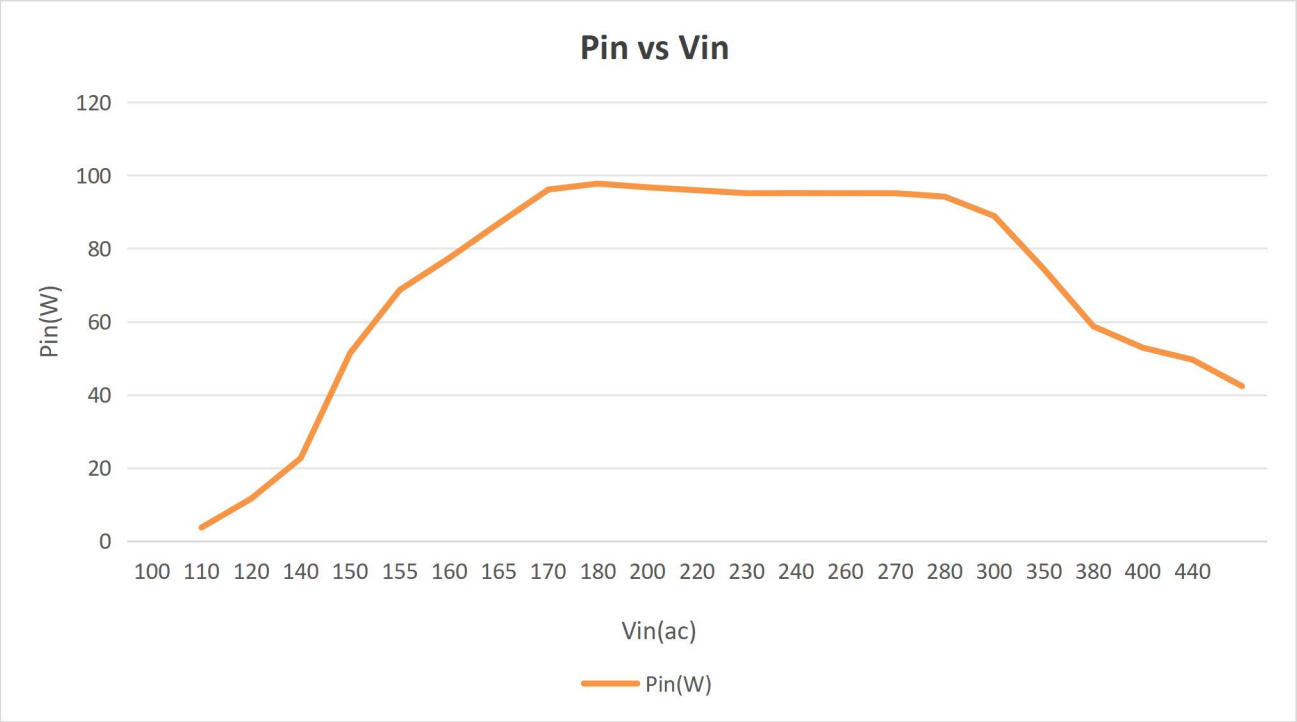


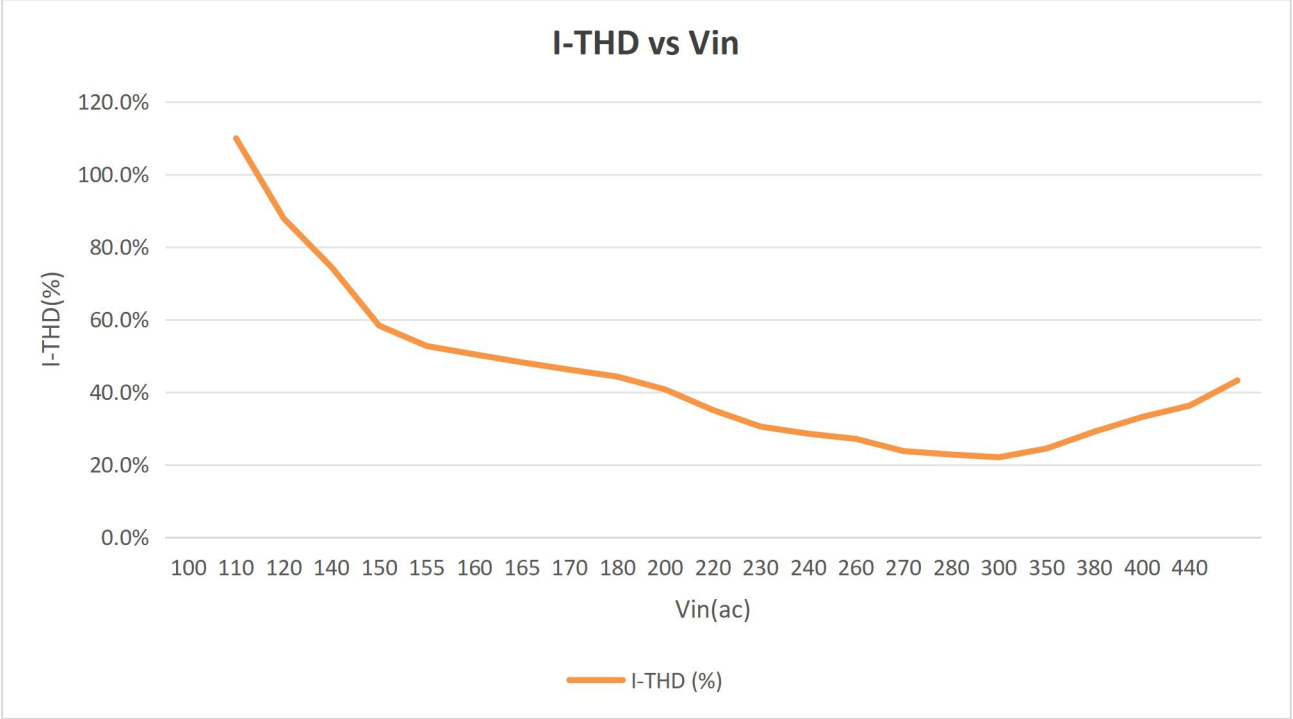
7 Thermal Performance (Unit: ℃)

Environment Temperature	32℃	32℃	32℃
Test Time	90min	90min	90min
Fuse Resistor-FR3	94.0	80.5	77.4
Fuse Resistor-FR4	100.1	85.8	82.5
IC-U1	85.2	82.5	82.9
IC-U2	84.5	82.5	83.5
EE16 Wire-T1	98.4	100.6	104.3
EE16 Core-T1	90.3	91.6	94.4
EE16 Wire-T2	96.6	99.5	103.6
EE16 Core-T2	89.3	91.5	95.0
Cap-CE1	77.1	78.8	78.0
D1-ES2J	83.1	82.3	83.5
D2-ES2J	83.2	81.2	82.0
DB1-TMBF410	91.1	84.8	83.6
LED1	90.1	88.8	89.4
LED2	94.0	92.3	91.7
LED3	95.8	94.1	93.5
LED4	92.7	91.4	90.8
LED5	88.3	86.9	86.5
LED6	86.9	84.4	83.5
Urms (V)	176V	230V	265V
F(Hz)	50	50	50
Irms mA	0.602	0.430	0.366
Prms W	96.6	94.4	93.6
PF	0.912	0.954	0.966

8 Detail Test Data

Vin(ac)	Hz	Iin (A）	Pin (W)	PF	Vout (V)	Iout (A)	Pout (W)	Efficiency (%)	I-THD (%)
100	60	0.056	3.69	0.662	125.8	0.026	3.27	88.57%	109.93%
110	60	0.143	11.56	0.738	129.1	0.084	10.84	93.85%	87.84%
120	60	0.238	22.63	0.788	132.1	0.159	21.00	92.83%	74.47%
140	60	0.433	51.42	0.851	137.6	0.341	46.92	91.25%	58.32%
150	60	0.533	68.65	0.873	139.9	0.442	61.84	90.07%	52.69%
155	50	0.568	77.42	0.882	141.0	0.492	69.37	89.61%	50.40%
160	50	0.613	86.89	0.890	142.0	0.546	77.53	89.23%	48.18%
165	50	0.651	96.13	0.898	143.0	0.599	85.66	89.11%	46.16%
170	50	0.637	97.74	0.906	143.0	0.609	87.09	89.10%	44.25%
180	50	0.585	96.73	0.919	142.7	0.609	86.90	89.85%	40.72%
200	50	0.514	95.94	0.938	142.7	0.612	87.33	91.03%	35.06%
220	50	0.456	95.11	0.951	142.7	0.612	87.33	91.82%	30.49%
230	50	0.435	95.15	0.956	142.7	0.614	87.62	92.08%	28.53%
240	50	0.414	95.12	0.959	142.6	0.615	87.70	92.19%	27.11%
260	50	0.380	95.11	0.967	142.7	0.616	87.90	92.42%	23.74%
270	50	0.362	94.18	0.968	142.5	0.612	87.21	92.60%	22.79%
280	50	0.325	88.88	0.967	141.7	0.578	81.90	92.15%	22.04%
300	50	0.259	74.37	0.952	139.8	0.494	69.06	92.86%	24.46%
350	50	0.184	58.70	0.914	137.2	0.394	54.06	92.09%	29.09%
380	50	0.158	52.85	0.883	136.3	0.355	48.39	91.56%	33.13%
400	50	0.144	49.59	0.863	135.8	0.330	44.81	90.37%	36.28%
440	50	0.119	42.35	0.815	134.6	0.285	38.36	90.59%	43.21%

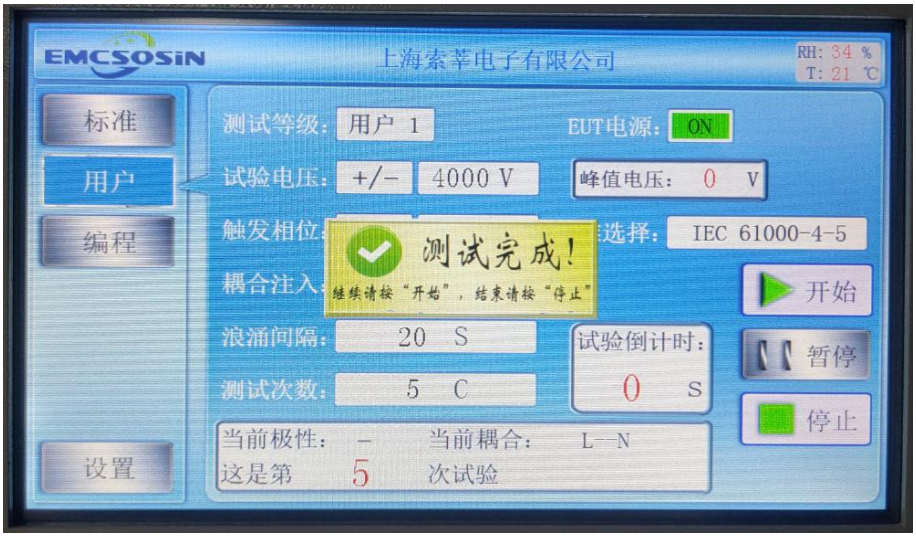

Pin vs Vin
120
100
80
60
40
20
0
Pin(W)
100 110 120 140 150 155 160 165 170 180 200 220 230 240 260 270 280 300 350 380 400 440
Vin(ac)
Pin(W)


I-THD vs Vin
120.0%
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
I-THD(%)
100 110 120 140 150 155 160 165 170 180 200 220 230 240 260 270 280 300 350 380 400 440
Vin(ac)
I-THD (%)

9 Reliability Test

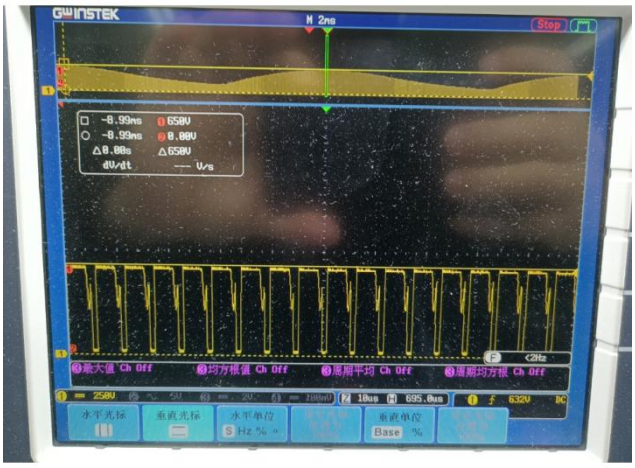
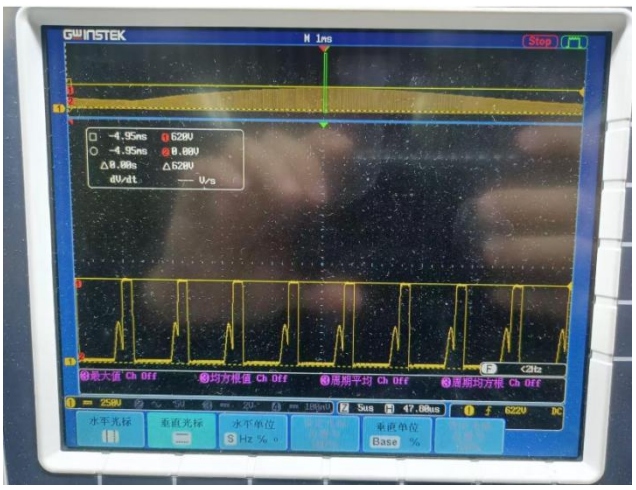
9.1 Short Circuit Protection: OK

9.2 Surge Capability: 5 counts of 4kV for each ± polarity and 0, 90, 180 and 270 phase



9.3 Component stress Test

- MOSFET: 650V
- DIODE: 620V

	
1# Voltage stress of MOSFET	2#: Voltage stress of DIODE ES2J

10Photometric Information

10.1 Initial Photometric Informati

杭州创惠仪器有限公司
www.inventfine.cn
Tel: 86-571-88091262
Fax: 86-571-88262100

INVENTFINE 创惠

Lightsource Test Report

Product Infomation

Product Type: 投光灯100w 0min　　Product Number: 54

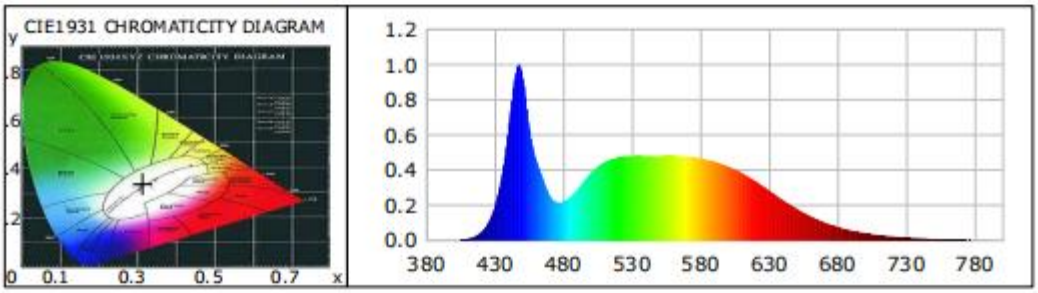
CIE Colorimetric Parameters

Chromaticity coordinates: x=0.3138 y=0.3387　u(u')=0.1950 v=0.3157 v'=0.4736
CCT: Tc=6382K (duv=0.00753)　Color Ratio: R=0.130 G=0.817 B=0.053
Peak Wavelength: 447.0nm　Half Bandwidth: 20.7nm
Dominant Wavelength: 495.3nm　Color Purity: 0.063
Central Wave: 447.7nm　Gravity Wave: 447.5nm
CRI: Ra= 81.4　TM30: Rf= 83, Rg= 96
GAI: GAI_BB_8=89.0, GAI_BB_15=93.1, GAI_EES=86.4

R1 =79	R2 =84	R3 =90	R4 =82	R5 =81	R6 =81	R7 =87	R8 =68
R9 =-4	R10=65	R11=83	R12=62	R13=80	R14=95	R15=72	

Color Quality Scale: Qa= 82.2, Qf= 82.2, Qp= 82.5, Qg= 91.5

Q1 =84	Q2 =97	Q3 =79	Q4 =78	Q5 =83	Q6 =84	Q7 =86	Q8 =90
Q9 =97	Q10=86	Q11=84	Q12=83	Q13=82	Q14=68	Q15=74	



Photometric Parameters

Luminous Flux: 10196 lm　Efficiency: 105.58 lm/W　Radiant Power: 32.173 W
Total mains efficacy: 105.58 lm/W　Energy Efficiency Class: F (EU 2019/2015)
Auxiliary lamp correction factor: 1.00

Electric Parameters

Voltage: 229.29V　Current: 0.4387A　Power: 96.58W
Power Factor: 0.9601　Frequency: 50.00Hz　DF: 0.9964

Test Infomation
Scan Range: 380~800:1nm　Photometric Method: sphere-photometer (spec_rev)
Stabilization Time: 0 Min　ALC.: 1.0000　Photometric Condition: Sphere diameter: 1.50m, 4门
Max of Signal: 51788 (1987)　CCD Integration Time: 24.15 ms

Condition: Tx:24.3'C, Ti:23.6'C, R.H.:60%　Test Device: CMS-3000S
Test Lab:　Test Time: 2024-11-11 11:34:44
Operator:　Inspector:

10.2 Stable Photometric Information

杭州创惠仪器有限公司
www.inventfine.cn
Tel: 86-571-88091262
Fax: 86-571-88262100

INVENTFINE®创惠

Lightsource Test Report

Product Information

Product Type: 投光灯100w 30min　　Product Number: 56

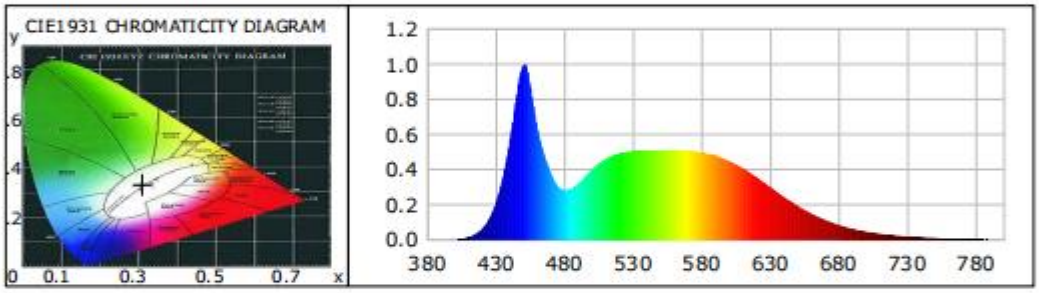
CIE Colorimetric Parameters

Chromaticity coordinates: x=0.3104 y=0.3329　u(u')=0.1948 v=0.3134 v'=0.4701
CCT: Tc=6596K (duv=0.00632)　Color Ratio: R=0.130 G=0.812 B=0.057
Peak Wavelength: 450.7nm　Half Bandwidth: 25.7nm
Dominant Wavelength: 491.5nm　Color Purity: 0.078
Central Wave: 451.3nm　Gravity Wave: 451.2nm
CRI: Ra= 82.9　TM30: Rf= 84, Rg= 94
GAI: GAI_BB_8=89.0, GAI_BB_15=93.5, GAI_EES=87.2

R1 =80	R2 =87	R3 =92	R4 =83	R5 =82	R6 =83	R7 =88	R8 =69
R9 =1	R10=70	R11=82	R12=62	R13=82	R14=96	R15=75	

Color Quality Scale: Qa= 82.4, Qf= 82.6, Qp= 82.3, Qg= 91.0

Q1 =84	Q2 =98	Q3 =80	Q4 =76	Q5 =82	Q6 =84	Q7 =86	Q8 =90
Q9 =97	Q10=88	Q11=84	Q12=83	Q13=83	Q14=70	Q15=75	



Photometric Parameters

Luminous Flux: 9010.2 lm　Efficiency: 95.62 lm/W　Radiant Power: 28.971 W
Total mains efficacy: 95.62 lm/W　Energy Efficiency Class: F (EU 2019/2015)
Auxiliary lamp correction factor: 1.00

Electric Parameters

Voltage: 229.58V　Current: 0.4285A　Power: 94.23W
Power Factor: 0.9579　Frequency: 50.00Hz　DF: 0.9951

Test Infomation
Scan Range: 380~800:1nm
Stabilization Time: 30 Min　ALC.: 1.0000
Max of Signal: 47782 (2065)
Photometric Method: sphere-photometer (spec_rev)
Photometric Condition: Sphere diameter: 1.50m, 4∏
CCD Integration Time: 27.92 ms

Condition: Tx:25.1'C, Ti:25.3'C, R.H.:60%　Test Device: CMS-3000S
Test Lab:　Test Time: 2024-11-11 12:36:45
Operator:　Inspector:

10.3 Luminaire distribution curve

EVERFINE

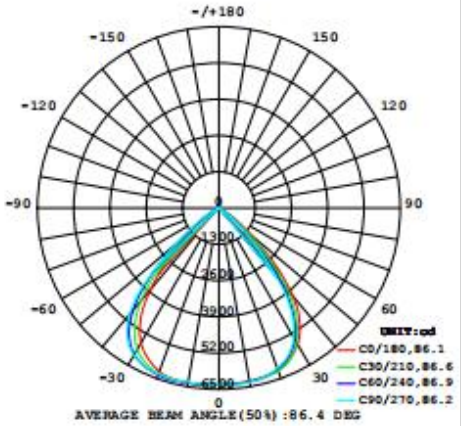
EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT Page 1 Of 11

STREETLIGHT PHOTOMETRIC TEST REPORT

Test:U:229.89V I:0.4321A P:94.780W PF:0.9541 Freq:49.99Hz Lamp Flux:11168.8x1 lm		
NAME: 100W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

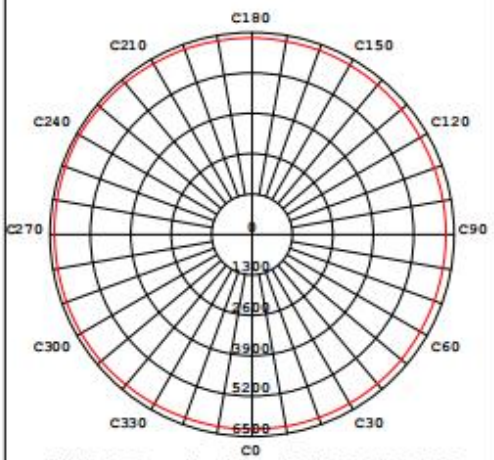
DATA OF LAMP		PHOTOMETRIC DATA Eff: 117.84 lm/W			
MODEL	100W	Imax(cd)	6404	η street_up(%)	0.0
NOMINAL POWER(W)	100	LOR(%)	100.0	η street_down(%)	45.7
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	11169	η house_up(%)	0.0
NOMINAL FLUX(lm)	11168.8	MAXIMUM @(C,γ)	240,16.5	η house_down(%)	54.3
LAMPS INSIDE	1	η up(%)	0.0	76 FLASHAREA(m2)	0.00100
TEST VOLTAGE(V)	220	η down(%)	100.0	SLI	15.485

INTENSITY DISTRIBUTION DIAGRAM IN C PLANS



AVERAGE BEAM ANGLE(50%):86.4 DEG

MAX INTENSITY CONE SURFACE DISTRIBUTION DIAGRAM



HOUSE SIDE Max @ γ = 16.5DEG STREET SIDE

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature:25.3DEG
Operators:DAMIN
Test Date:19 November 2024

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.443
Humidity:65.0%
Test Distance:10.470m [K=1.0000]
Remarks:

11 Affix

11.1 Affix1 Schematics

11.2 Affix2 BOM

11.3 Affix3 PCB

11.4 Affix4 Transformer specification

11.5 Affix5 IC Data sheet

Version History

Version	Date	Description
A0	Dec. 2024	Draft
A1	Dec. 2024	Released
A2	Mar.2026	PCB upgrade