

请 承 认 书

SPECIFICATION FOR APPROVAL

CUSTOMER :

PROGRAM NO. : LED-00-117V-0.375A-001-R2-V1

ISSUE DATE: 2020-06-01

VERSION	Details	
V0	Initiated	
V1	Add LED supplier BMTC and Update the description The change results in the change of MCPCB board thickness from 1.6 to 1.2	
DESIGNED BY		CHECKED BY
SK		
CUSTOMER APPROVED SIGNATURE :		
APPROVED DATE:		

FERRICS TECHNOLOGY CO., LIMITED

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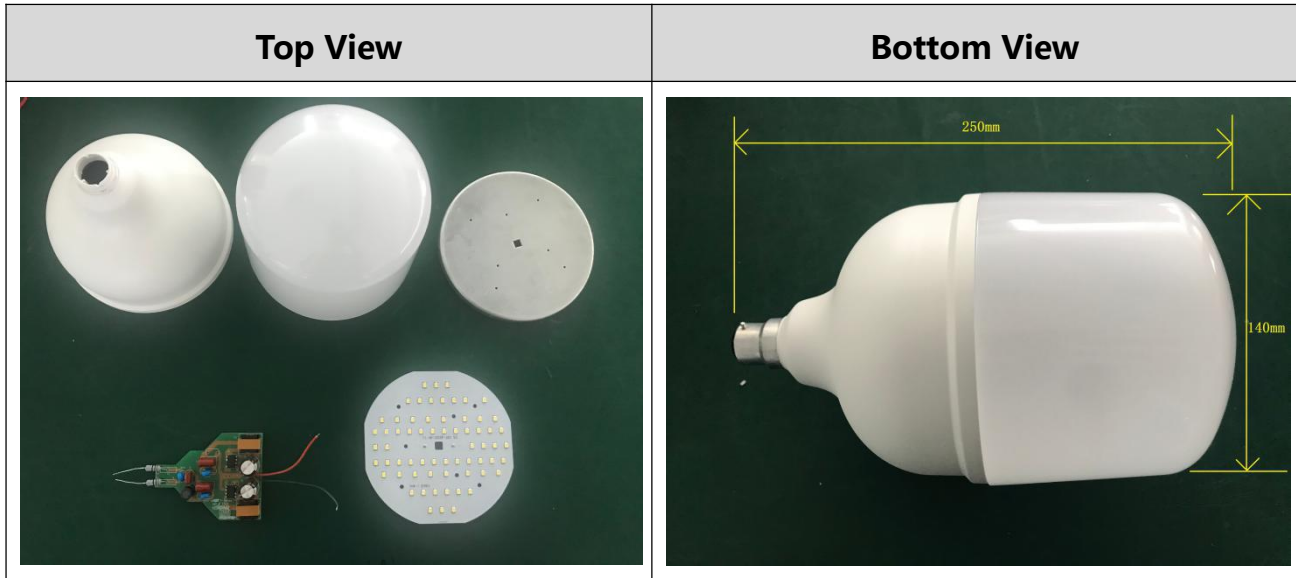
Fax: +86-573-80700736

<http://www.ferrics.com>

Email: sales@ferrics.com

LED-00-117V-0.375A-001-R2-V1

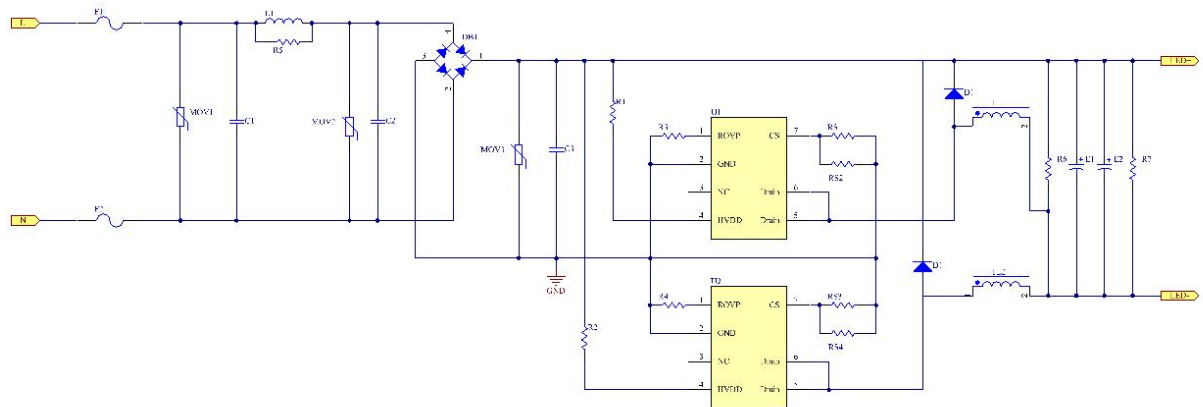
1. Photograph



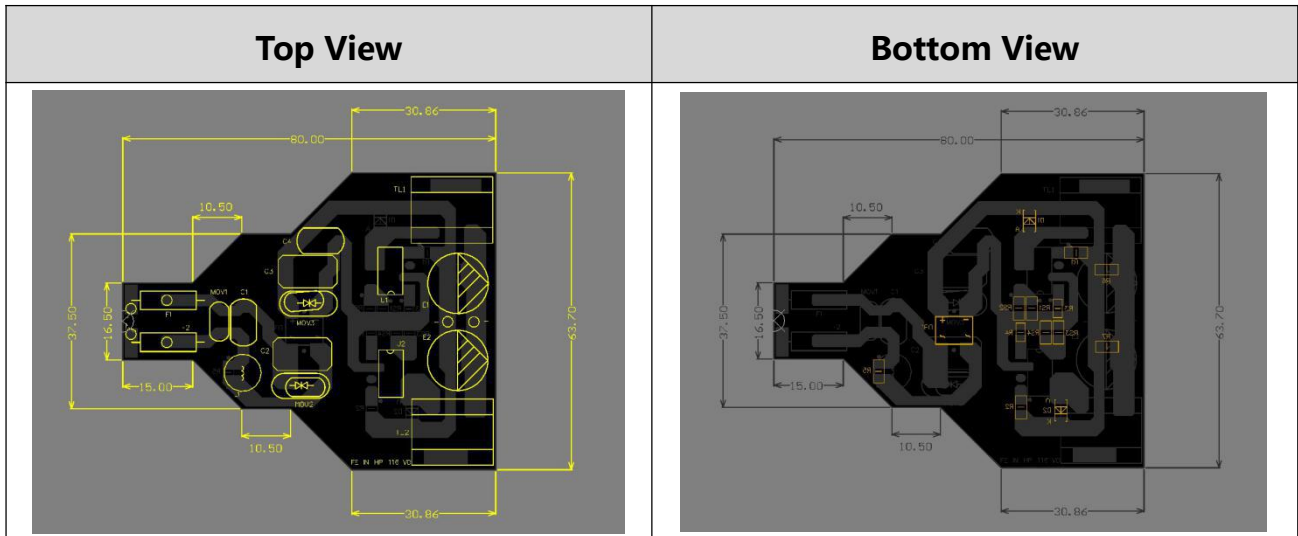
2. Input & Output Parameters

	Min	Normal	Max
Input Voltage(Vac)	200	230	420-440
Input Power(W)		46.95	
Output Voltage(Vdc)		117	
Output Current(mA)		375	
Efficiency		93%	
Surge			4KV

3. Schematic diagram



4. PCB layout



5. Test Reports

1) No load Output Voltage

AC input Voltage (Vac)	200V	230V	260V	300V	350V	400V	440V
Output voltage(Vdc)	158	163	162	168	169	175	175

2) General Test

Input : AC input voltage is 200Vac,230Vac,260Vac,300Vac,350Vac,400Vac,440Vac.

Load condition: CV 117Vdc.

Input Voltage	Load	Input Power (W)	PF	THD	Output Current (mA)	Eff (%)
200Vac	CV 117Vdc	38.06	0.964		302	92.94
230Vac		46.95	0.974	19.1	375	93.45
260Vac		47.26	0.972		378	93.58
300Vac		47.68	0.946		382	93.74
350Vac		46.61	0.943		367	92.12
400Vac		36.41	0.876		284	91.26
440Vac		27.35	0.761		204	87.27

3) Short-Circuit Test

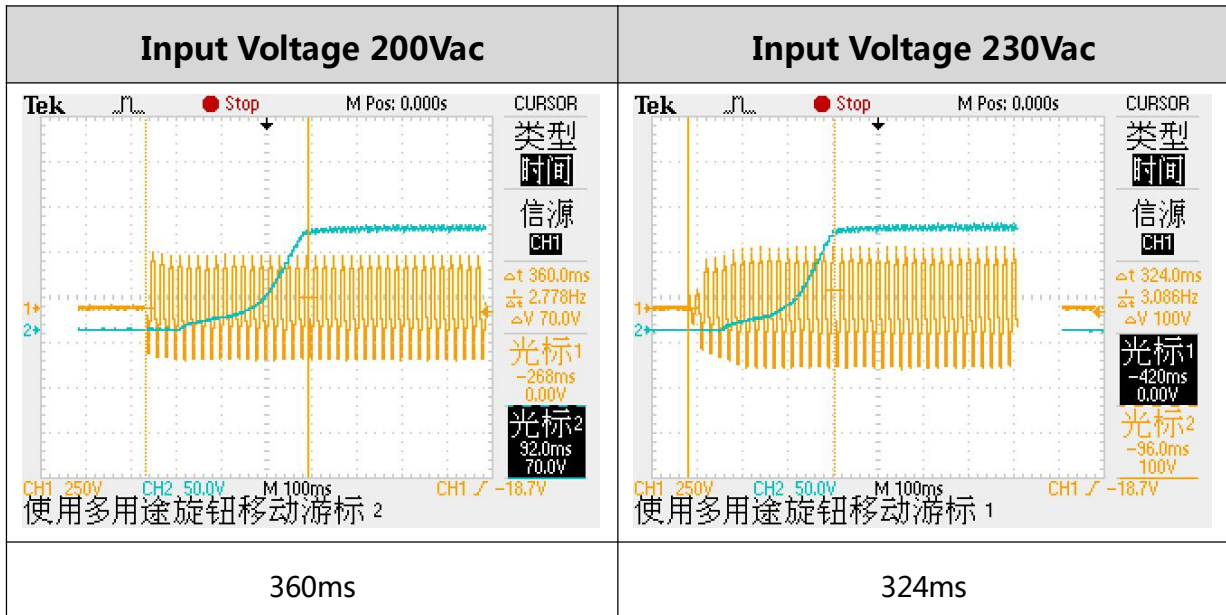
Input: AC200~440V; Output: short.

Test result: No components damaged, the demo board should be working when the short-circuit is removed.

AC input Voltage(Vac)	200V	230V	260V	300V	350V	400V	440V
Input Power (W)	0.42	0.71	0.88	1.49	1.55	2.05	4.58

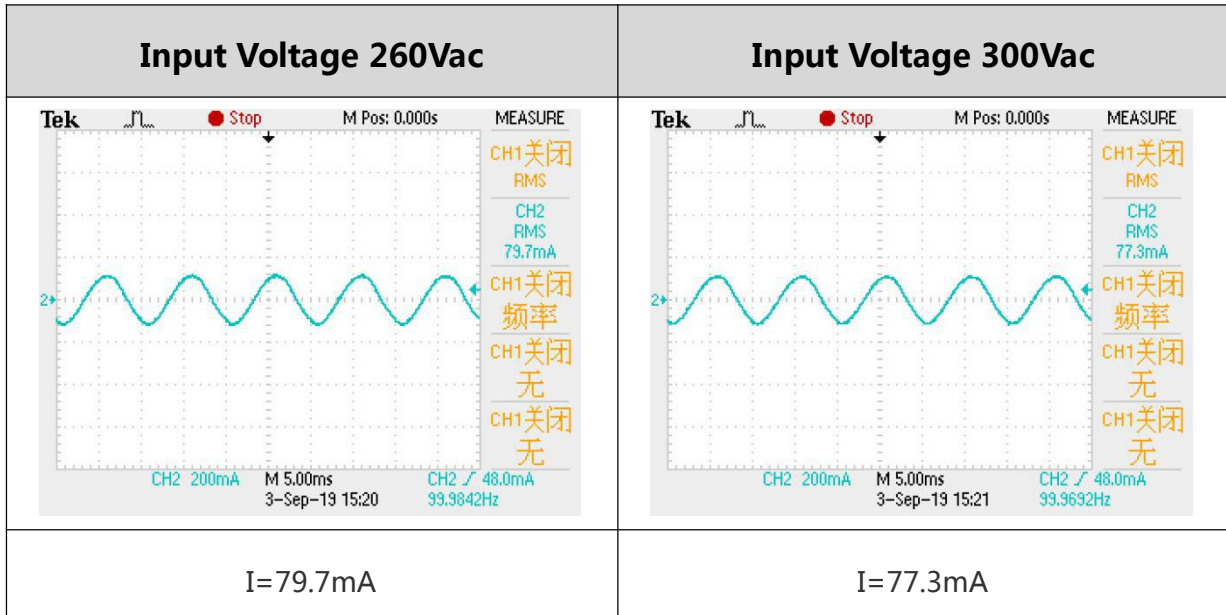
4) Start-up Time

Load condition: Full led load.



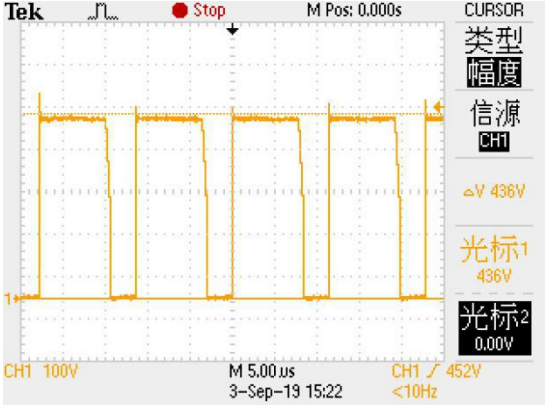
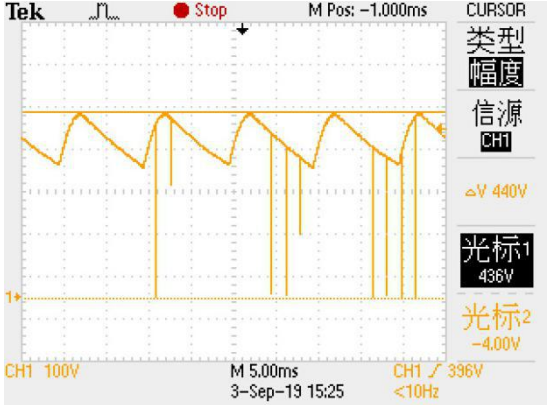
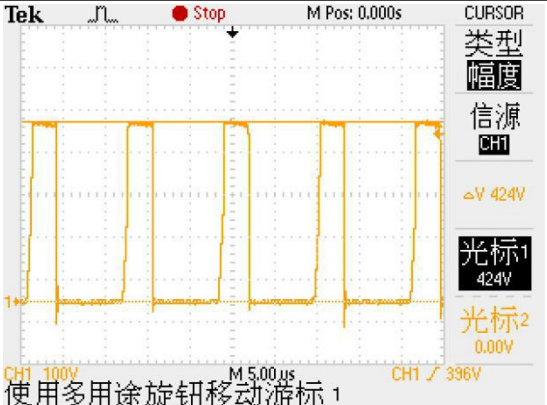
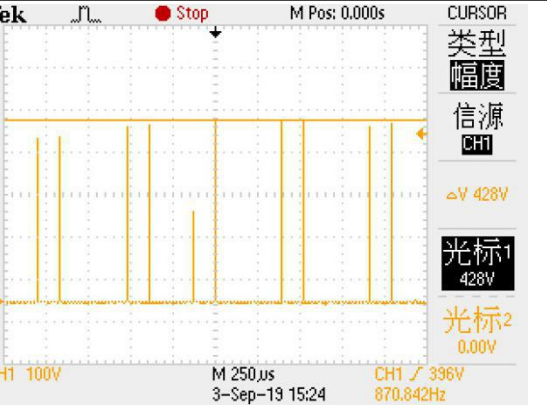
5) Ripple current Test (RMS)

Load condition: Full led load.



6) Mosfet and DIODE Voltage Stress Test

Input voltage: 300Vac, Load condition: full led load/short

MOSFET Voltage 300Vac,full load	MOSFET Voltage 300Vac,short
 <p>Cursor: 类型, 幅度, 信源 CH1, ΔV 436V, 光标1 436V, 光标2 0.00V</p> <p>CH1 100V M 5.00us 3-Sep-19 15:22 CH1 / 452V <10Hz</p>	 <p>Cursor: 类型, 幅度, 信源 CH1, ΔV 440V, 光标1 436V, 光标2 -4.00V</p> <p>CH1 100V M 5.00ms 3-Sep-19 15:25 CH1 / 396V <10Hz</p>
<p style="text-align: center;">ΔV=436V</p>	<p style="text-align: center;">ΔV=440V</p>
Diode Voltage 300Vac,full load	Diode Voltage 300Vac,short
 <p>Cursor: 类型, 幅度, 信源 CH1, ΔV 424V, 光标1 424V, 光标2 0.00V</p> <p>CH1 100V M 5.00us 3-Sep-19 15:24 CH1 / 396V</p> <p>使用多用途旋钮移动光标 1</p>	 <p>Cursor: 类型, 幅度, 信源 CH1, ΔV 428V, 光标1 428V, 光标2 0.00V</p> <p>CH1 100V M 250us 3-Sep-19 15:24 CH1 / 396V 870.842Hz</p>
<p style="text-align: center;">ΔV=424V</p>	<p style="text-align: center;">ΔV=428V</p>

7) Temperature Test

Case Closed, No wind environmental test. Vin:200Vac/230Vac/300Vac

Full led load.

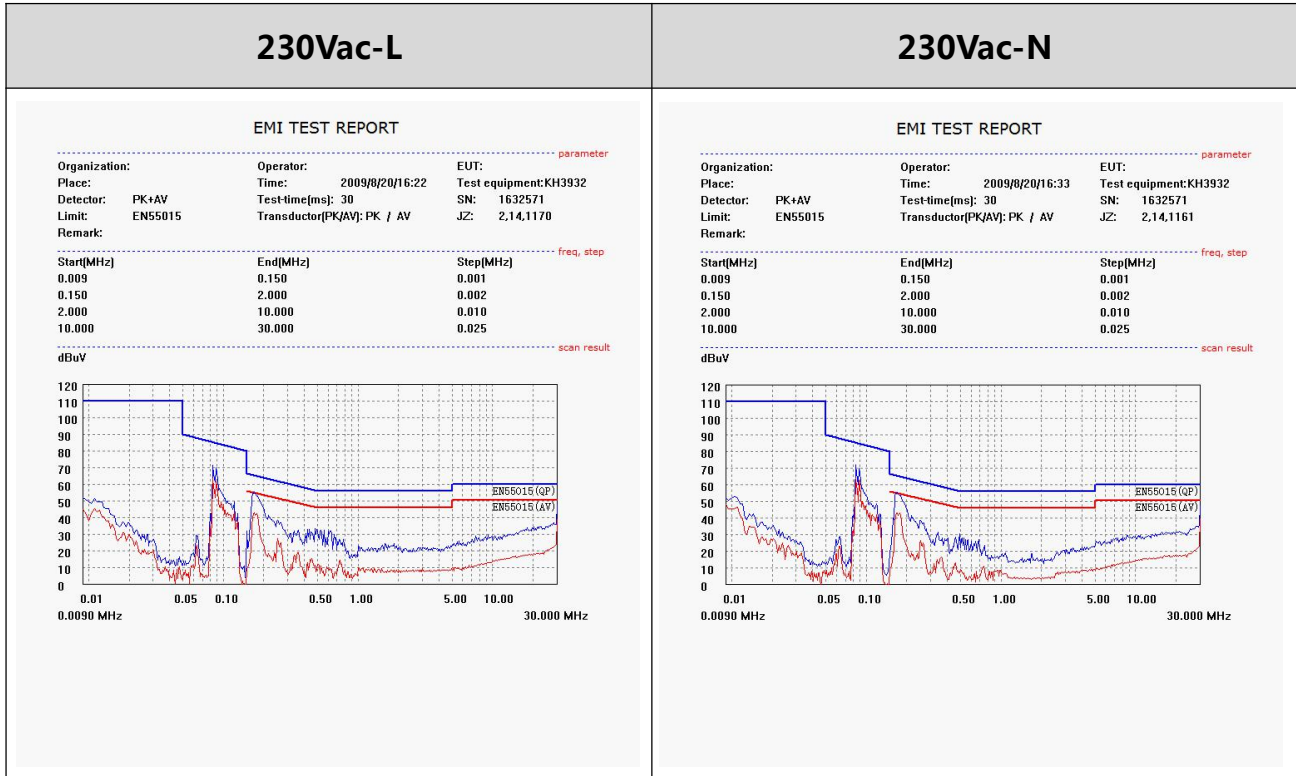
Position	200Vac	230Vac	300Vac
U1	94.5	101.2	108.5
U2	97.5	104.2	110.5
D1	82.5	88.2	90.5
D2	93.5	99.2	105.5
DB1	80.5	79.2	77.5
Winding1	92.5	98.2	100.5
CORE1	92.5	98.2	103.5
Winding2	87.5	93.2	97.5
CORE2	85.5	90.2	94.5
L1	75.5	74.2	69.5
LED-1	80.5	83.2	85.5
F1	63.5	60.2	51.5
Shell	70.5	74.2	75.5
Ambient temperature	25°C		

8) 4KV 30S Surge Testing

The test conditions: 230Vac, 4kV, 30s.

Angel	Positive or Negative	times	Pass/Fail
0	+	5	Pass
0	-	5	Pass
90	+	5	Pass
90	-	5	Pass
180	+	5	Pass
180	-	5	Pass
270	+	5	Pass
270	-	5	Pass

9) EMI Testing



10) Lumen Testing

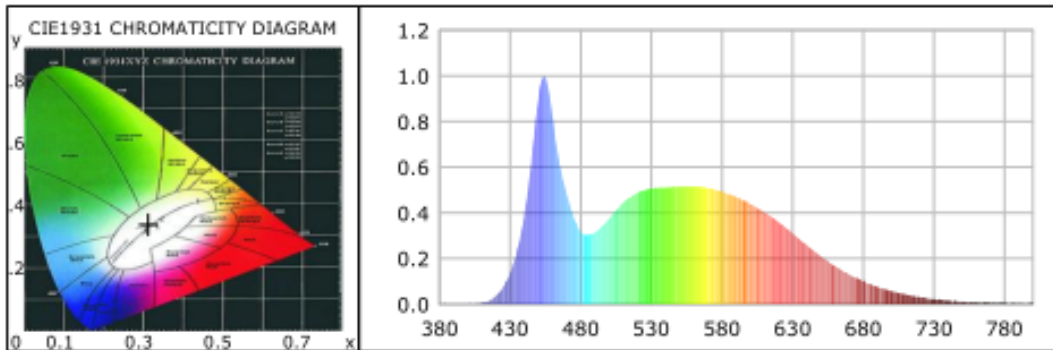
Lightsource Test Report

Product Information

Product Number: 93510

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3123$ $y=0.3369$ $u(u')=0.1946$ $v=0.3149$ $v'=0.4724$
 CCT: $T_c=6474K$ ($duv=0.00740$) Color Ratio: $R=0.132$ $G=0.808$ $B=0.060$
 Peak Wavelength: 453.9nm Half Bandwidth: 26.7nm
 Dominant Wavelength: 493.9nm Color Purity: 0.069
 CRI: $R_a=83.9$ TM30: $R_f=82$, $R_g=93$
 $R1=81$ $R2=89$ $R3=94$ $R4=81$ $R5=82$ $R6=85$ $R7=89$ $R8=70$
 $R9=10$ $R10=74$ $R11=80$ $R12=59$ $R13=84$ $R14=97$ $R15=76$
 Color Quality Scale: $Q_a=82.9$, $Q_f=83.2$, $Q_p=81.8$, $Q_g=90.2$
 $Q1=83$ $Q2=98$ $Q3=82$ $Q4=75$ $Q5=79$ $Q6=81$ $Q7=85$ $Q8=90$
 $Q9=97$ $Q10=90$ $Q11=86$ $Q12=85$ $Q13=85$ $Q14=73$ $Q15=77$



Photometric Parameters

Luminous Flux: 5221.51 lm Efficiency: 118.00 lm/W Radiant Power: 16.869 W
 EEI: 0.12 Energy Efficiency Class: A+ (EU 874-2012)

Electric Parameters

Voltage: 230.70V Current: 0.1960A Power: 44.25W
 Power Factor: 0.9760 Frequency: 49.99Hz

Test Information

Scan Range: 380~800:1nm Photometric Method: sphere-spectroradiometer
 Stabilization Time: 3.0 Min Photometric Condition: Sphere diameter: 1.75m, 4π
 Max of Signal: 50846 (3242) CCD Integration Time: 178.25 ms