



# LED Power Driver Tester (WT2080)

## Brochure

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**Leader in Lighting & Electrical Test Instruments**

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## Introduction



WT2080 LED Power Driver Test Instrument is the comprehensive test instrument for LED drive power which is according to GB/T 24825-2009 and IEC 62384:2006. It can measure the following parameters: Input Characteristics Test (AC&DC), Output Characteristics Test (AC&DC), Input Start Characteristics Test (DC)

The WT2080 usually works with [LISUN LSP-500VAR pure sine AC Power Source](#), [LISUN M9822 DC Electronic Load to test LED Driver](#). The software can be run Win7, Win8 and Win10.

### ● Function

#### 1. Input Characteristics Test (AC)

- To measure the input voltage, current, power, power factor, power grid frequency, total harmonic and the harmonic component of 0 ~ 50 times, wave ratio, initial phase angle, peak phase angle, the phase Angle.

- The fundamental frequency scope of the current and voltage : 45Hz~65Hz; Narrowband range: 45 Hz ~ 5 kHz; Broadband range: 45 Hz ~ 1 MHz.

- Voltage range: 3 ~ 300 V (CF = 1.67); Current range: 5mA ~ 2.7A (CF = 3); Power range: 0.015 ~ 800 W; Power factor range: 0.000 ~ + 1.000

#### 2. Input Characteristics Test (DC)

- Measuring voltage, current, power.

- Voltage range: 3~500V; Current range: 5mA~8A; Power range: 0.015~4000W

#### 3. Output Characteristics Test (AC)

- Measuring lamp voltage, lamp current, and lamp power.

- Lamp voltage range: 3~300V(CF=3); Lamp current range: 5mA~2.7A(CF=3); Lamp power range: 0.015~800W

#### 4. Output Characteristics Test (DC)

- Measuring output lamp voltage, lamp current, lamp power, ripple wave current.

- Voltage range: 3~500V; Current range: 5mA~8A; Power range: 0.015~4KW; Ripple wave current range: 5mA~2.5A

## 5. Output Start Characteristics Test (DC)

- Change curve and data of the measuring lamp voltage and lamp current within 0~2 seconds.
- Lamp voltage range: 3~500V;
- Lamp current range: 5mA~8A

## ● Specification

### AC:

Items	Basic error	Measurement condition
Voltage	$\pm (0.1\% \text{read} + 0.1\% \text{range} + 1 \text{bit})$	Input waveforms: sine wave; Input frequency: 45Hz ~ 65Hz;
Current		
Power		
Power Factor	$\pm (0.002 + 0.001/\text{read} + 1 \text{bit})$	
Frequency	$\pm 0.1\% \text{read}$	
Harmonic Wave (Valuable)	$\pm (0.1\% \text{range} + 5\% \text{read})$	
Lamp Voltage	$\pm (0.1\% \text{read} + 0.1\% \text{range} + 1 \text{bit})$	Input waveforms: sine wave; Input frequency: 45Hz ~ 65Hz;
Lamp Current		
Lamp Power		

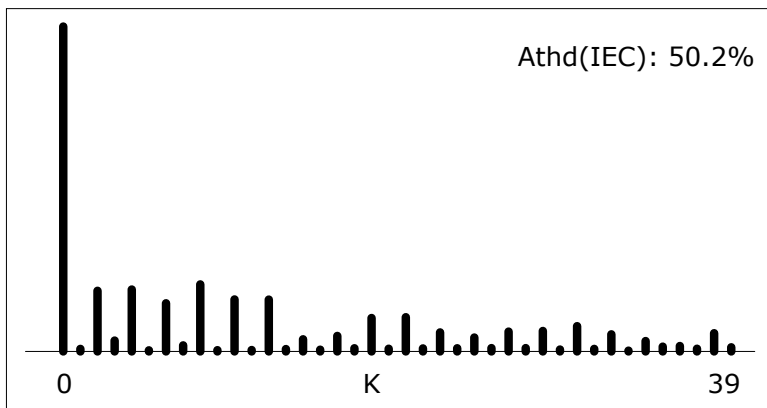
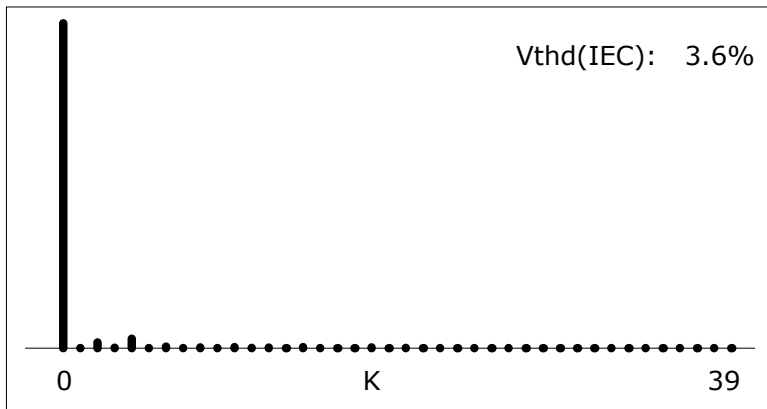
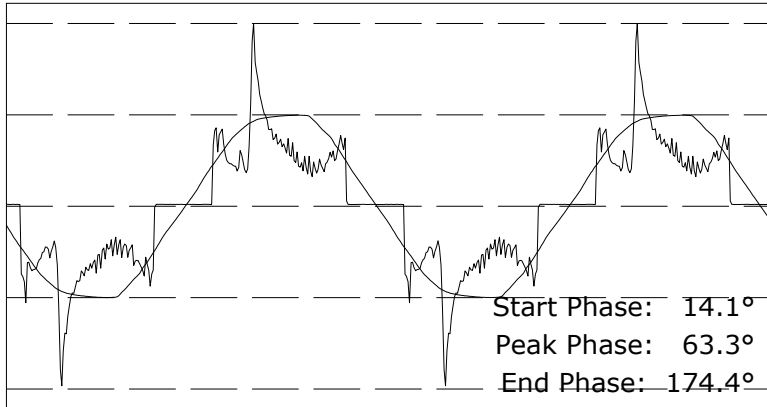
### DC:

Item	Basic error	Measurement condition
Voltage	$\pm (0.1\% \text{read} + 0.1\% \text{range} + 1 \text{bit})$	DC signal
Current		
Power		
Lamp Voltage	$\pm (0.1\% \text{read} + 0.1\% \text{range} + 1 \text{bit})$	DC signal
Lamp Current		
Lamp Power		
Ripple Current	$\pm 2.5\% \text{range}$	20 ~ 70KHz

- The Next Pages are the Test Report from WT2080

### Input Characteristics Test Report [Narrow Band]

Voltage 224.41(V)      Current 0.2217(A)      Power 44.12(W)      Power Factor 0.8868      Frequency 49.97(Hz)



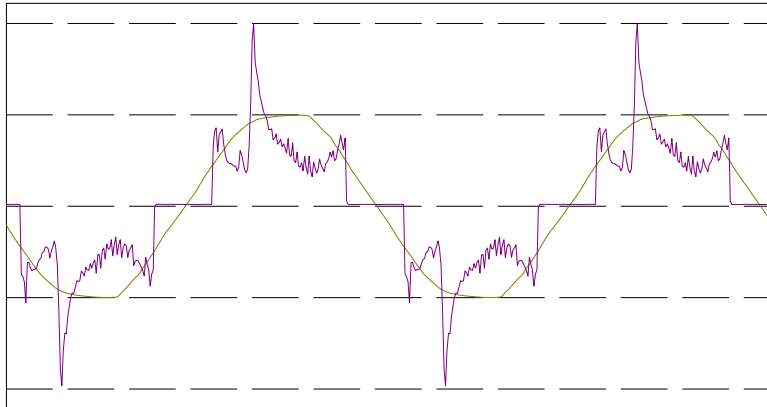
Spectrum(k)	Voltage	Current
0	0.0%	0.0%
1	100.0%	100.0%
2	0.1%	0.8%
3	1.8%	18.7%
4	0.2%	3.4%
5	2.9%	19.1%
6	0.1%	0.4%
7	0.5%	14.8%
8	0.1%	1.9%
9	0.3%	20.7%
10	0.1%	0.4%
11	0.4%	16.0%
12	0.1%	0.5%
13	0.2%	16.0%
14	0.0%	0.8%
15	0.4%	3.7%
16	0.1%	0.5%
17	0.0%	4.8%
18	0.0%	1.0%
19	0.3%	10.3%
20	0.0%	0.9%
21	0.1%	10.6%
22	0.0%	0.9%
23	0.1%	5.9%
24	0.0%	1.0%
25	0.1%	4.3%
26	0.0%	1.0%
27	0.1%	6.1%
28	0.0%	1.1%
29	0.0%	6.3%
30	0.0%	0.6%
31	0.0%	7.8%
32	0.0%	0.8%
33	0.1%	5.3%
34	0.0%	0.3%
35	0.1%	3.2%
36	0.0%	1.5%
37	0.1%	1.7%
38	0.0%	0.9%
39	0.1%	5.7%

Type:LED 45W  
 Manufacturer:BRIGHT LIGHTING  
 Temperature:25°C  
 Test Instrument: Lisun LED Driver Analysis System  
 Operator: HUANG  
 Test Time:2013-05-30

Number:1  
 Humidity:85%  
 Inspector:HECTOR

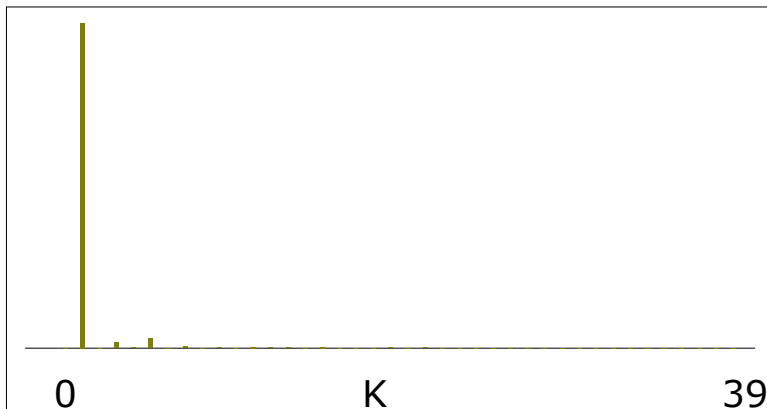
### Input Characteristics Test Report [Narrow Band]

Voltage	Current	Power	Power Factor	Frequency
224.41(V)	0.2217(A)	44.12(W)	0.8868	49.97(Hz)

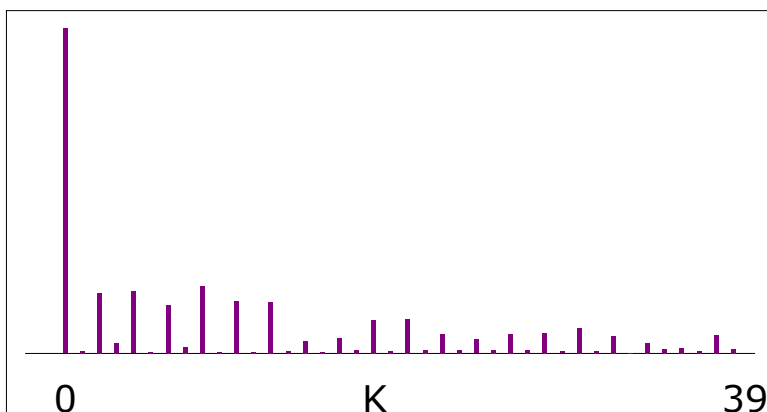


**Voltage**  
 Sensitivity: 306.54 V/Div  
 Peak: 306.54 V

**Current**  
 Sensitivity: 0.3565 A  
 Peak: 0.7130 A  
 Start Phase: 14.1°  
 Peak Phase: 63.3°  
 End Phase: 174.4°



**Voltage Spectrum**  
 THD(IEC): 3.56%  
 H3: 1.82%  
 H5: 2.92%  
 H7: 0.51%  
 H9: 0.28%



**Current Spectrum**  
 THD(IEC): 50.2%  
 H3: 18.69%  
 H5: 19.07%  
 H7: 14.84%  
 H9: 20.67%

Type:LED 45W  
 Manufacturer:BRIGHT LIGHTING  
 Temperature:25°C  
 Test Instrument: Lisun LED Driver Analysis System  
 Operator: HUANG  
 Test Time:2013-05-30

Number:1  
 Humidity:85%  
 Inspector:HECTOR

## Input Characteristics Test Report [Narrow Band] (Cont.)

Voltage: 224.41(V)

VCF: 1.366

Vthd(IEC): 3.56%

## Voltage Spectrum

Spectrum(k)	Rel.	Abs.(V)
0	0.01%	0.02
1	100.00%	224.47
2	0.05%	0.12
3	1.82%	4.08
4	0.15%	0.34
5	2.92%	6.56
6	0.10%	0.22
7	0.51%	1.14
8	0.06%	0.13
9	0.28%	0.63
10	0.07%	0.16
11	0.37%	0.82
12	0.11%	0.24
13	0.21%	0.46
14	0.05%	0.10
15	0.36%	0.82
16	0.06%	0.14
17	0.05%	0.11
18	0.03%	0.06
19	0.25%	0.57
20	0.02%	0.05
21	0.10%	0.23
22	0.01%	0.02
23	0.09%	0.20
24	0.01%	0.03
25	0.07%	0.16
26	0.01%	0.03
27	0.06%	0.13
28	0.03%	0.06
29	0.02%	0.05
30	0.01%	0.03
31	0.04%	0.10
32	0.02%	0.04
33	0.06%	0.13
34	0.01%	0.02
35	0.07%	0.17
36	0.01%	0.03
37	0.06%	0.14
38	0.01%	0.03
39	0.07%	0.15

Current: 0.2217(A)

ACF: 3.216

Athd(IEC): 50.18%

## Current Spectrum

Spectrum(k)	Rel.	Abs.(A)
0	0.01%	0.0000
1	100.00%	0.1969
2	0.79%	0.0016
3	18.69%	0.0368
4	3.40%	0.0067
5	19.07%	0.0375
6	0.37%	0.0007
7	14.84%	0.0292
8	1.88%	0.0037
9	20.67%	0.0407
10	0.41%	0.0008
11	16.05%	0.0316
12	0.46%	0.0009
13	15.99%	0.0315
14	0.75%	0.0015
15	3.75%	0.0074
16	0.54%	0.0011
17	4.78%	0.0094
18	1.01%	0.0020
19	10.34%	0.0204
20	0.88%	0.0017
21	10.59%	0.0209
22	0.94%	0.0018
23	5.91%	0.0116
24	1.03%	0.0020
25	4.32%	0.0085
26	1.03%	0.0020
27	6.12%	0.0120
28	1.05%	0.0021
29	6.34%	0.0125
30	0.61%	0.0012
31	7.82%	0.0154
32	0.83%	0.0016
33	5.29%	0.0104
34	0.25%	0.0005
35	3.25%	0.0064
36	1.51%	0.0030
37	1.68%	0.0033
38	0.88%	0.0017
39	5.66%	0.0111

Type:LED 45W

Manufacturer:BRIGHT LIGHTING

Temperature:25°C

Test Instrument: Lisun LED Driver Analysis System

Operator: HUANG

Test Time:2013-05-30

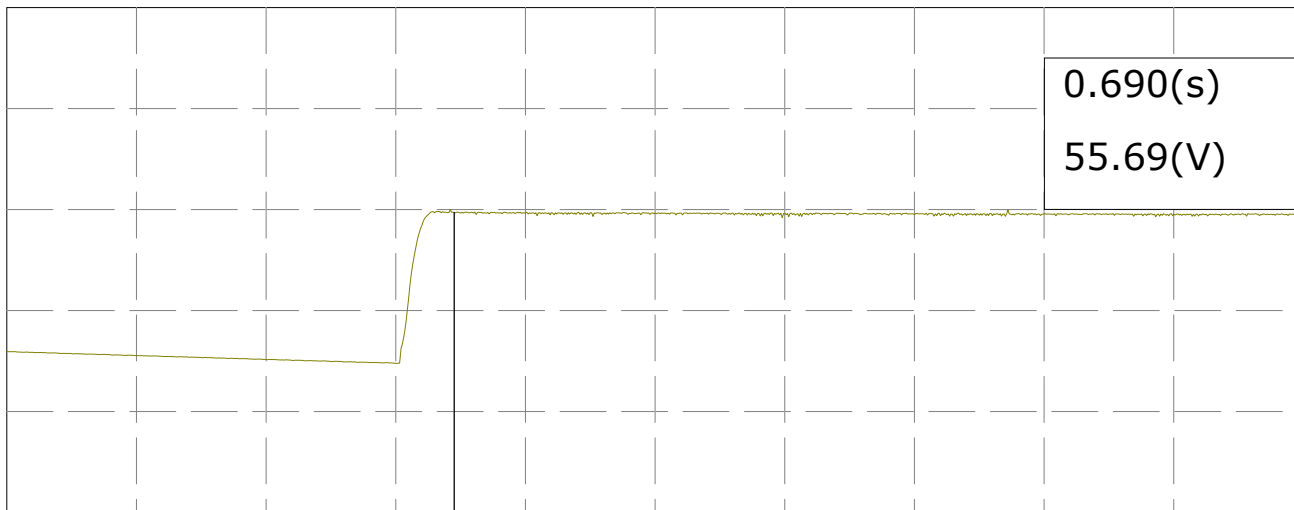
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Humidity:85%

Inspector:HECTOR

### Start characteristics

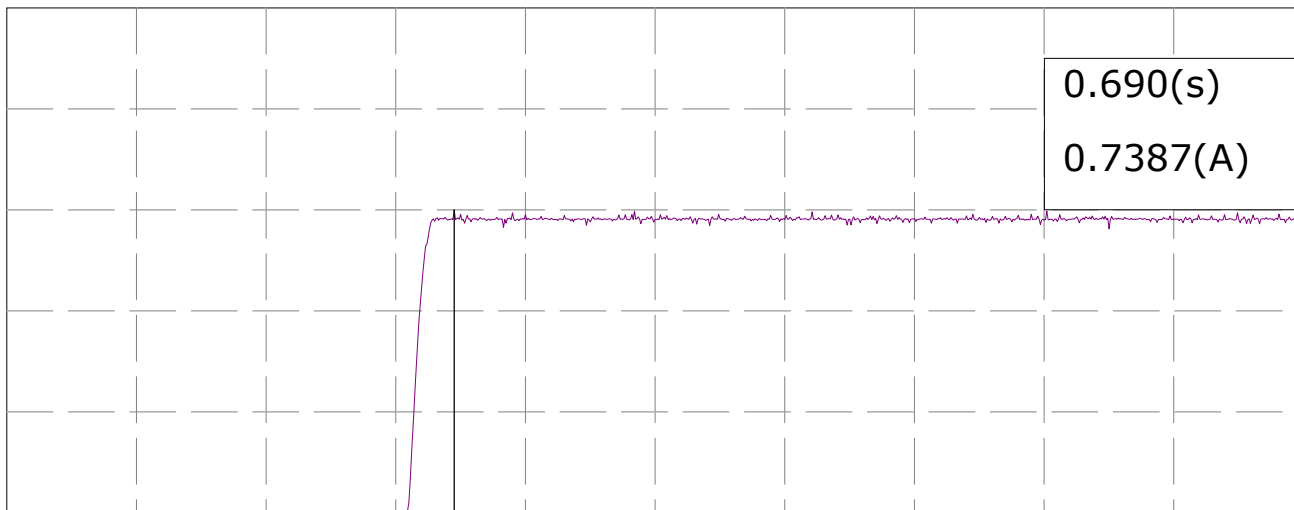
#### Lamp Voltage Wave



Lamp Voltage(rms)  
Sensitivity: 18.74 V/Div  
Peak Voltage: 56.21 V

Time  
Sensitivity: 200 ms/Div  
Time to peak: 0.684 s

#### Lamp Current Wave



Lamp Current(rms)  
Sensitivity: 0.2471 A/Div  
Peak Current: 0.7387 A  
Average Current: 0.4890 A  
Current peak to average: 1.510

Time  
Sensitivity: 200 ms/Div  
Time to peak: 0.690 s

### Output

Lamp Voltage(rms):55.25V

Lamp Current(rms):0.7164A

Power:39.58W

Ripple Current:0.016A

Energy Efficiency:0.899

#### Lamp Voltage Wave



#### Lamp Current Wave



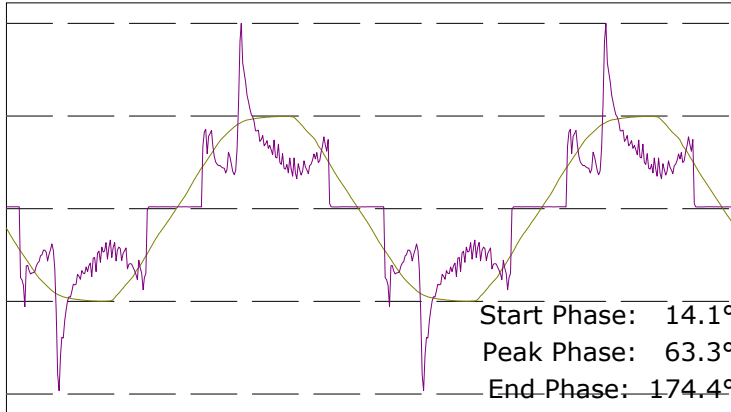
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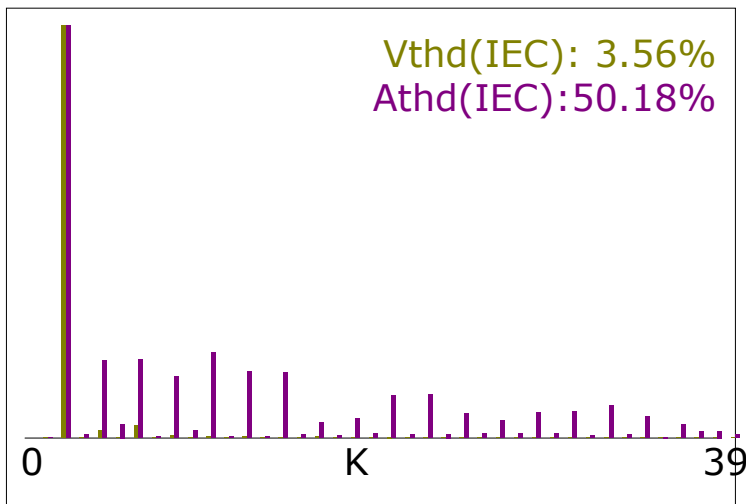


## Input & Output Characteristics Test Report

### Input Characteristics Test Report [Narrow Band]



Voltage: 224.411(V)  
VCF: 1.366  
Vthd(IEC): 3.56%  
Current: 0.222(A)  
ACF: 3.216  
Athd(IEC): 50.18%  
Power: 44.1(W)  
Power Factor: 0.8868  
Frequency: 49.97(Hz)



Voltage Spectrum  
H3: 1.82%  
H5: 2.92%  
H7: 0.51%  
H9: 0.28%

Current Spectrum  
H3: 18.69%  
H5: 19.07%  
H7: 14.84%  
H9: 20.67%

### Output characteristics



Lamp Voltage(rms):55.25V  
Lamp Current(rms):0.7164A  
Power:39.58W  
Ripple Current:0.016A  
Energy Efficiency:0.899