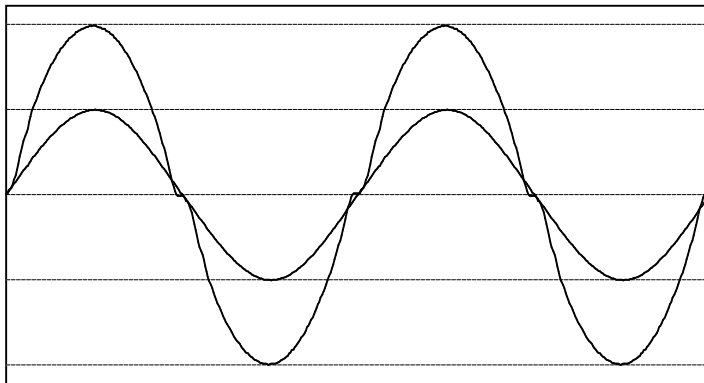


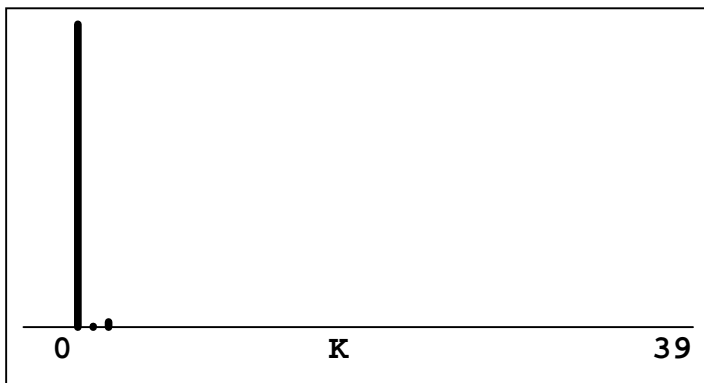
Electronic Ballast Test Report

Input Characteristics[Narrow Band](I)

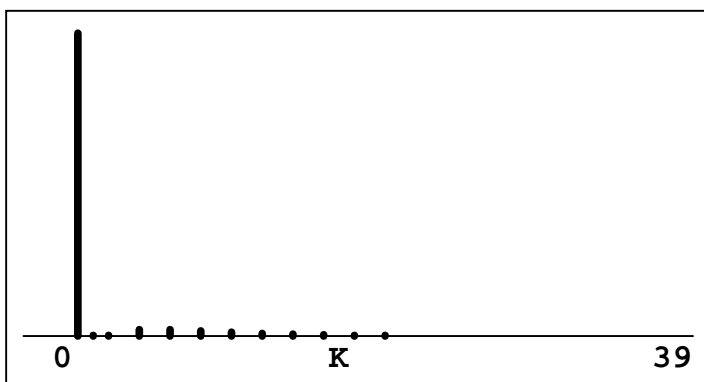
Vrms	Arms	Power	PF	Freq.
112.0(V)	0.564(A)	63.11(W)	0.998	59.98(Hz)



Voltage
Sensitivity :160.68 V/Div
Peak Voltage:160.7 V
Current
Sensitivity: 0.397 A/Div
Peak Current:0.791 A
Start Phase: 2.8 ~
Peak Phase: 85.8 ~
End Phase: 173.0~



Voltage Spec.
Vthd: 1.8%(IEC)
Vh3 : 1.8%
Vh5 : 0.1%
Vh7 : 0.1%
Vh9 : 0.1%



Current Spec.
Athd: 4.0%(IEC)
Ah3 : 0.3%
Ah5 : 2.2%
Ah7 : 2.2%
Ah9 : 1.8%

Test Instrument:Everfine HB-5A System

Manufacturer:Everfine

Type:M8165_2D_55W_110_MAX

Temperature:25deg

Operator: YAGI 2009-11-23

Number:1

Humidity:75%

Inspector: 2009-11-23

Electronic Ballast Test Report

Input Characteristics[Narrow Band](II)

Vrms:112.0(V)
 VCF :1.43
 Vthd: 1.8%(IEC)

Arms:0.564(A)
 Acf : 1.40
 Athd: 4.0%(IEC)

Voltage Spectrum

K	relat.	Vrmsk
0	0.0%	0.0
1	100.0%	112.0
2	0.4%	0.4
3	1.8%	2.0
4	0.1%	0.1
5	0.1%	0.1
6	0.0%	0.0
7	0.1%	0.1
8	0.0%	0.0
9	0.1%	0.1
10	0.0%	0.0
11	0.0%	0.0
12	0.0%	0.0
13	0.0%	0.0
14	0.0%	0.0
15	0.0%	0.0
16	0.0%	0.0
17	0.0%	0.0
18	0.0%	0.0
19	0.0%	0.0
20	0.0%	0.0
21	0.0%	0.0
22	0.0%	0.0
23	0.0%	0.0
24	0.0%	0.0
25	0.0%	0.1
26	0.0%	0.0
27	0.1%	0.1
28	0.0%	0.0
29	0.0%	0.0
30	0.0%	0.0
31	0.0%	0.1
32	0.0%	0.0
33	0.0%	0.0
34	0.0%	0.0
35	0.0%	0.0
36	0.0%	0.0
37	0.0%	0.0
38	0.0%	0.0
39	0.0%	0.0

Current Spectrum

K	relat.	Armsk	mA/W
0	0.0%	0.000	0.00
1	100.0%	0.564	8.94
2	0.3%	0.002	0.03
3	0.3%	0.002	0.03
4	0.1%	0.000	0.01
5	2.2%	0.012	0.19
6	0.1%	0.000	0.01
7	2.2%	0.012	0.20
8	0.1%	0.000	0.01
9	1.8%	0.010	0.16
10	0.1%	0.000	0.01
11	1.3%	0.008	0.12
12	0.0%	0.000	0.00
13	0.9%	0.005	0.08
14	0.1%	0.000	0.00
15	0.6%	0.004	0.06
16	0.0%	0.000	0.00
17	0.5%	0.003	0.04
18	0.0%	0.000	0.00
19	0.4%	0.002	0.03
20	0.0%	0.000	0.00
21	0.2%	0.001	0.02
22	0.0%	0.000	0.00
23	0.1%	0.001	0.01
24	0.0%	0.000	0.00
25	0.0%	0.000	0.00
26	0.0%	0.000	0.00
27	0.0%	0.000	0.00
28	0.0%	0.000	0.00
29	0.1%	0.001	0.01
30	0.0%	0.000	0.00
31	0.2%	0.001	0.01
32	0.0%	0.000	0.00
33	0.1%	0.001	0.01
34	0.0%	0.000	0.00
35	0.1%	0.001	0.01
36	0.0%	0.000	0.00
37	0.0%	0.000	0.00
38	0.0%	0.000	0.00
39	0.0%	0.000	0.00

Test Instrument:Everfine HB-5A System

Manufacturer:Everfine

Type:M8165_2D_55W_110_MAX

Temperature:25deg

Operator: YAGI 2009-11-23

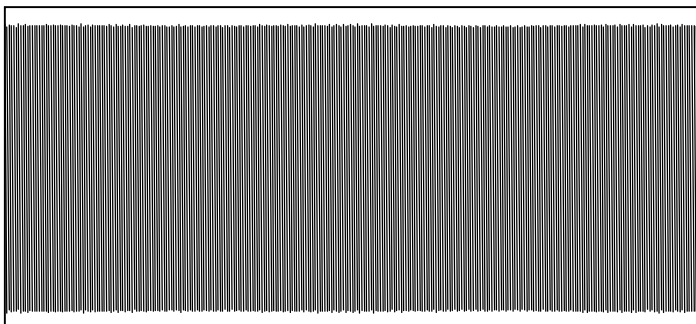
Number:1

Humidity:75%

Inspector: 2009-11-23

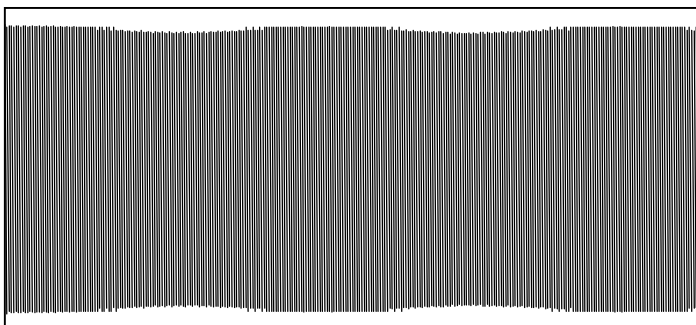
Electronic Ballast Test Report

Steady State Characterictics



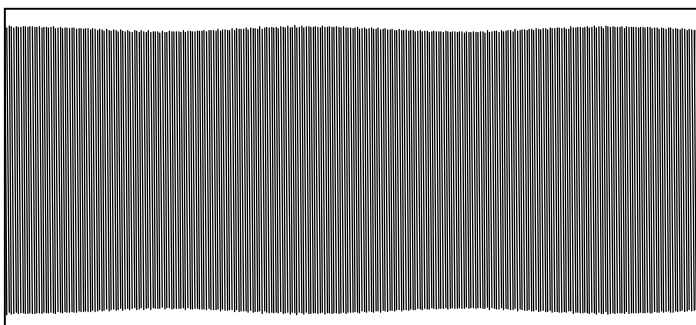
Lamp Voltage

Vlrms : 54.1 (V)
Vlp : 80.1 (V)
Vlcf : 1.48
Vlhfrms: 54.9 (V)
Vlcfhf : 1.46



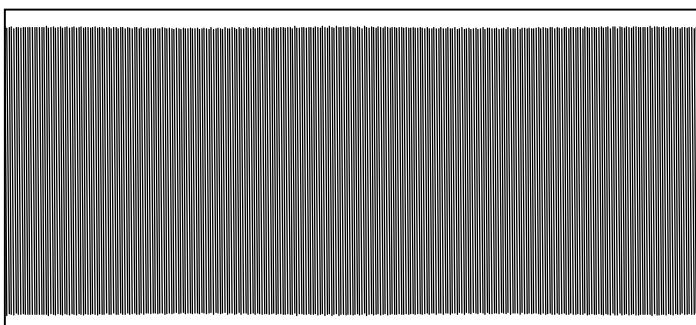
Filament Current

Afrms : 0.145(A)
Afp : 0.248(A)
Afcf : 1.71
Afrmshf: 0.149(A)
Afcfhf : 1.66



Lamp Current

Alrms : 0.927(A)
Alp : 1.370(A)
Alcf : 1.48
Aldhc : 0.06 %
Alrmshf: 0.950(A)
Alcfhf : 1.44
Pout : 49.2 (W)



Cathode Current

Akrms : 0.926(A)
Akp : 1.198(A)
Akcfc : 1.29
Akrmshf: 0.936(A)
Akcfcfhf : 1.28
Freq : 25.56(kHz)

Test Instrument:Everfine HB-5A System

Manufacturer:Everfine

Type:M8165_2D_55W_110_MAX

Temperature:25deg

Operator: YAGI 2009-11-23

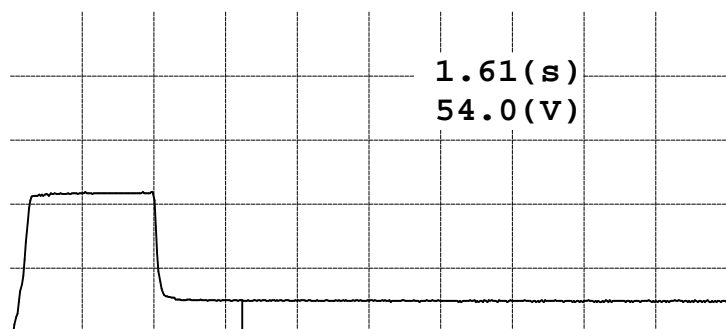
Number:1

Humidity:75%

Inspector: 2009-11-23

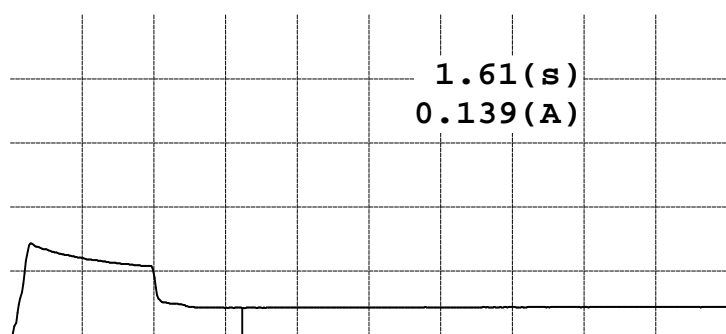
Electronic Ballast Test Report

Start Characteristics



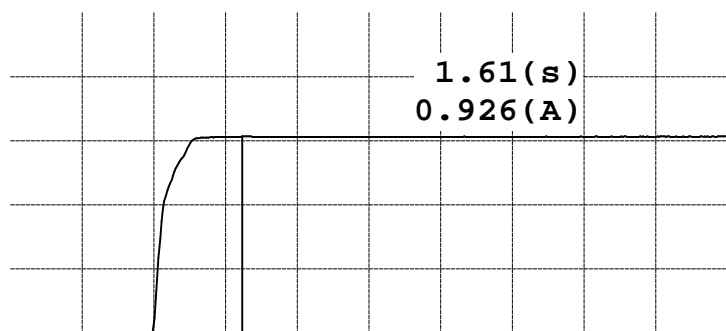
Lamp Voltage(rms)
Sensitivity: 100.00 V/Div
Peak Volt : 221.7 V

Time
Sensitivity: 500 ms/Div
Time to Vp : 0.52 s



Filament Current(rms)
Sensitivity : 0.300 A/Div
Peak Current: 0.438 A

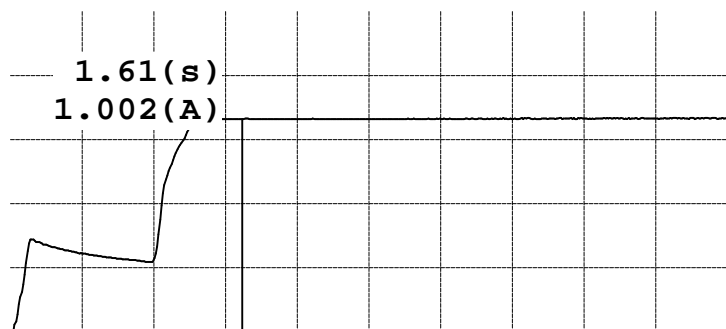
Time
Sensitivity: 500 ms/Div
Time To Ap : 0.14 s



Lamp Current(rms)
Sensitivity : 0.300 A/Div
Peak Current: 0.926 A

Time
Sensitivity: 500 ms/Div
Time to Ap : 1.61 s

Preheat time: 0.990 s



Cathode Current(rms)
Sensitivity : 0.300 A/Div
Peak Current: 1.007 A

Time
Sensitivity: 500 ms/Div
Time to Ap : 3.42 s

Test Instrument: Everfine HB-5A System

Manufacturer: Everfine

Type: M8165_2D_55W_110_MAX

Temperature: 25deg

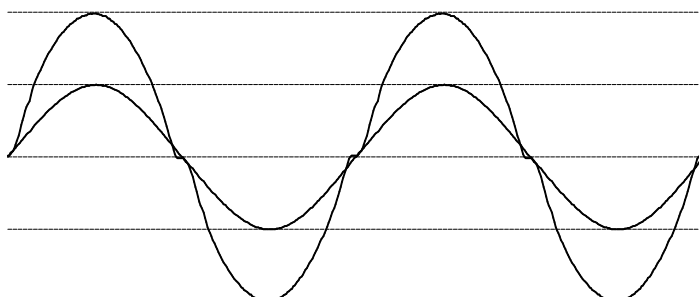
Operator: YAGI 2009-11-23

Number: 1

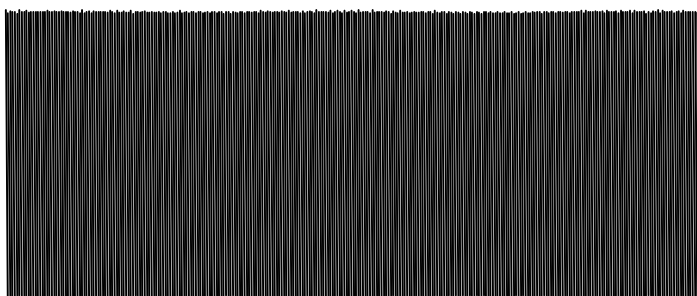
Humidity: 75%

Inspector: 2009-11-23

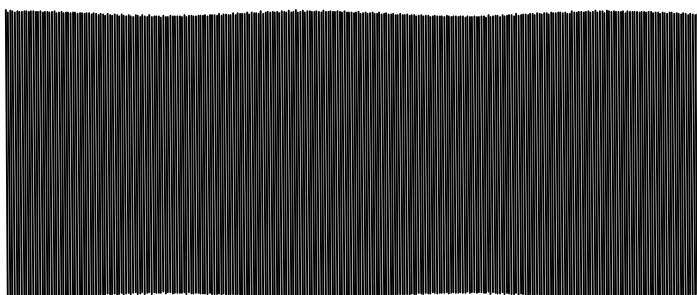
Electronic Ballast Test Report

Input & Output Characteristics Test Report
I. Input Characteristics

Vrms : 112.0(V)
Vp : 160.7(V)
Vthd : 1.8%(IEC)
Arms : 0.564(A)
Ap : 0.791(A)
Athd : 4.0%(IEC)
Power: 63.11(W)
PF : 0.998
Freq : 59.98(Hz)

II. Output Characteristics**Lamp Voltage Wave**

Vlrms: 54.1 (V)
Alrms: 0.927(A)
Afrms: 0.145(A)
Akrms: 0.926(A)
Pout : 49.2 (W)

Lamp Current Wave

Freq : 25.560(kHz)
Alcf : 1.48

Test Instrument: Everfine HB-5A System

Manufacturer: Everfine

Type: M8165_2D_55W_110_MAX

Temperature: 25deg

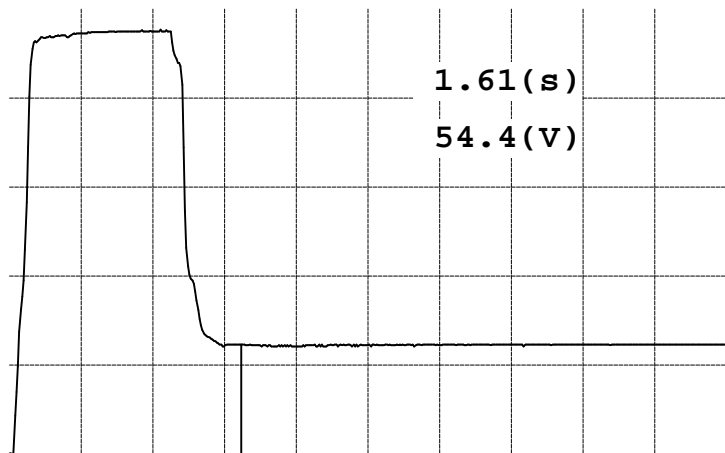
Operator: YAGI 2009-11-23

Number: 1

Humidity: 75%

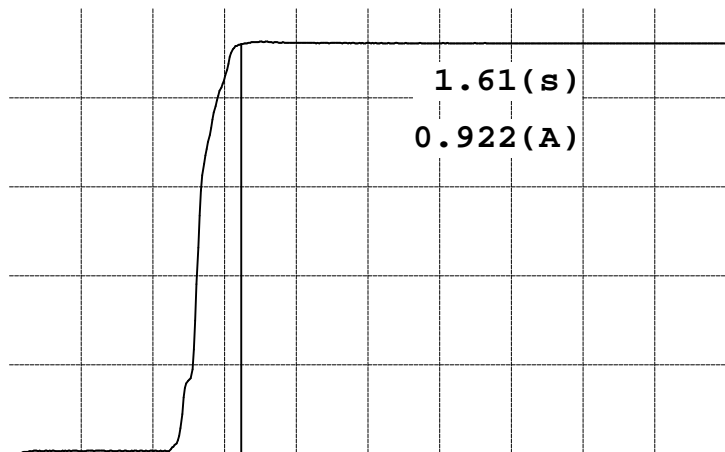
Inspector: 2009-11-23

Electronic Ballast Test Report

Preheat Energy

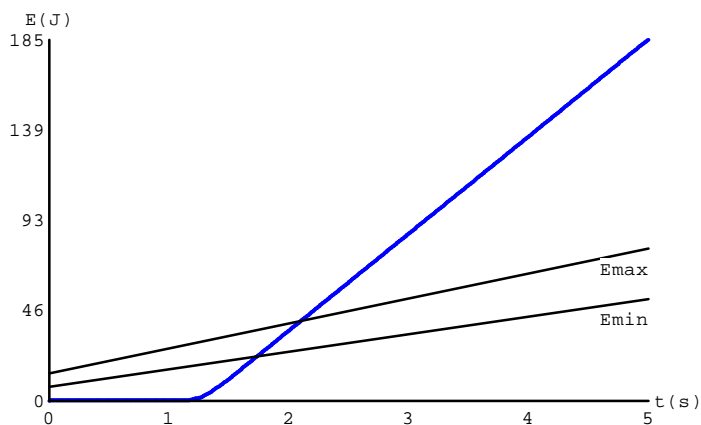
Filament Voltage(rms)
Sensitivity: 44.00 V/Div
Peak Volt : 209.9 V

Time
Sensitivity: 500 ms/Div
Time to Vp : 1.05 s



Filament Current(rms)
Sensitivity : 0.200 A/Div
Peak Current: 0.928 A

Time
Sensitivity: 500 ms/Div
Time To Ap : 1.74 s

**Preheat Parameter**

Pre-start : 0.00 s
Preheat Energy : 0.00 J

$E_{min} = Q + P \cdot t$ (Q=7.00J, P=9.00V)
 $E_{max} = F \cdot E_{min}$ (F=1.500)

Test Instrument: Everfine HB-5A System

Manufacturer: Everfine

Type: M8165_2D_55W_110_MAX

Temperature: 25deg

Operator: YAGI 2009-11-23

Number: 1

Humidity: 75%

Inspector: 2009-11-23