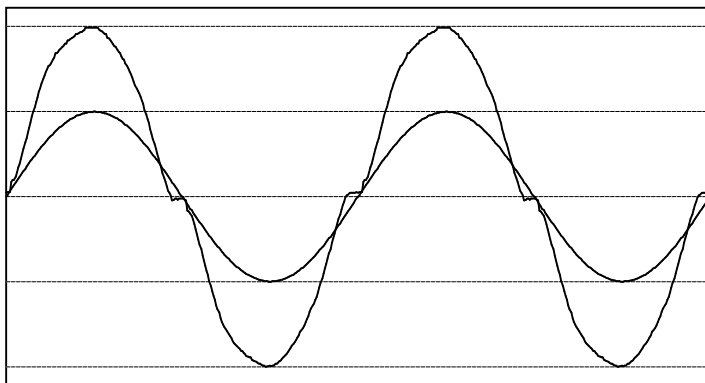


Electronic Ballast Test Report

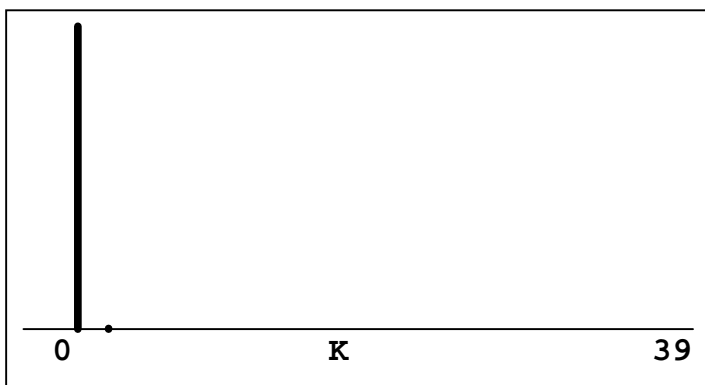
Input Characteristics[Narrow Band](I)

Vrms	Arms	Power	PF	Freq.
223.9(V)	0.285(A)	63.28(W)	0.992	49.99(Hz)



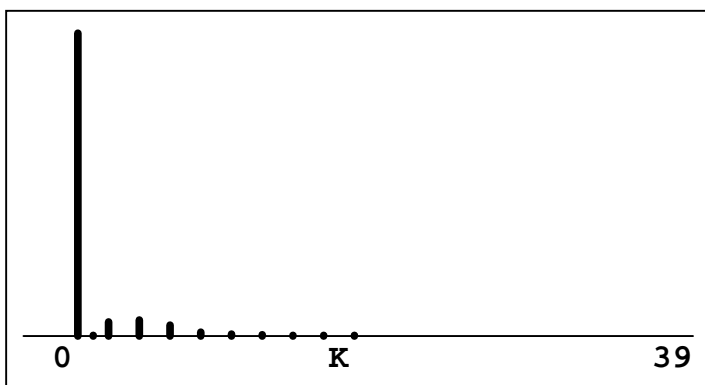
Voltage
Sensitivity : 316.84 V/Div
Peak Voltage: 316.8 V

Current
Sensitivity: 0.206 A/Div
Peak Current: 0.409 A
Start Phase: 0.0 ~
Peak Phase: 81.6 ~
End Phase: 168.8 ~



Voltage Spec.

Vthd:	0.3%(IEC)
Vh3 :	0.2%
Vh5 :	0.1%
Vh7 :	0.0%
Vh9 :	0.0%



Current Spec.

Athd:	8.3%(IEC)
Ah3 :	4.8%
Ah5 :	5.4%
Ah7 :	3.8%
Ah9 :	1.3%

Test Instrument: Everfine HB-5A System

Manufacturer: Everfine

Type: M8165_2D_55W_220_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:223.9(V)
 VCF :1.41
 Vthd: 0.3%(IEC)

Arms:0.285(A)
 Acf : 1.44
 Athd: 8.3%(IEC)

Voltage Spectrum

K	relat.	Vrmsk
0	0.0%	0.0
1	100.0%	224.0
2	0.0%	0.1
3	0.2%	0.5
4	0.0%	0.1
5	0.1%	0.2
6	0.0%	0.0
7	0.0%	0.1
8	0.0%	0.0
9	0.0%	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%	0.0
26	0.0%	0.0
27	0.0%	0.0
28	0.0%	0.0
29	0.0%	0.0
30	0.0%	0.0
31	0.0%	0.0
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%	0.284	4.48
2	0.3%	0.001	0.02
3	4.8%	0.014	0.21
4	0.1%	0.000	0.00
5	5.4%	0.015	0.24
6	0.1%	0.000	0.00
7	3.8%	0.011	0.17
8	0.0%	0.000	0.00
9	1.3%	0.004	0.06
10	0.0%	0.000	0.00
11	0.7%	0.002	0.03
12	0.0%	0.000	0.00
13	0.5%	0.001	0.02
14	0.0%	0.000	0.00
15	0.4%	0.001	0.02
16	0.0%	0.000	0.00
17	0.3%	0.001	0.01
18	0.0%	0.000	0.00
19	0.2%	0.001	0.01
20	0.0%	0.000	0.00
21	0.2%	0.001	0.01
22	0.0%	0.000	0.00
23	0.1%	0.000	0.01
24	0.0%	0.000	0.00
25	0.2%	0.000	0.01
26	0.0%	0.000	0.00
27	0.1%	0.000	0.00
28	0.0%	0.000	0.00
29	0.1%	0.000	0.00
30	0.1%	0.000	0.00
31	0.1%	0.000	0.00
32	0.0%	0.000	0.00
33	0.2%	0.000	0.01
34	0.1%	0.000	0.00
35	0.0%	0.000	0.00
36	0.0%	0.000	0.00
37	0.0%	0.000	0.00
38	0.0%	0.000	0.00
39	0.1%	0.000	0.00

Test Instrument:Everfine HB-5A System

Manufacturer:Everfine

Type:M8165_2D_55W_220_MAX

Temperature:25deg

Operator: YAGI 2009-11-23

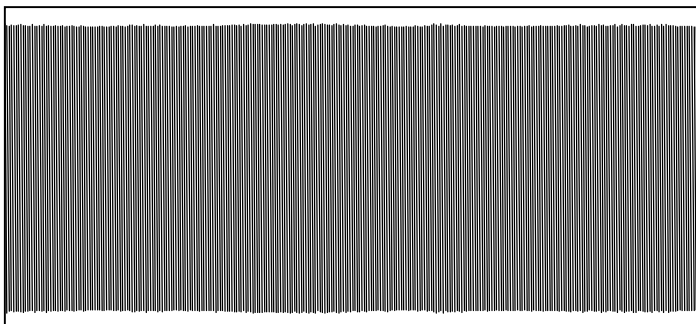
Number:1

Humidity:75%

Inspector: 2009-11-23

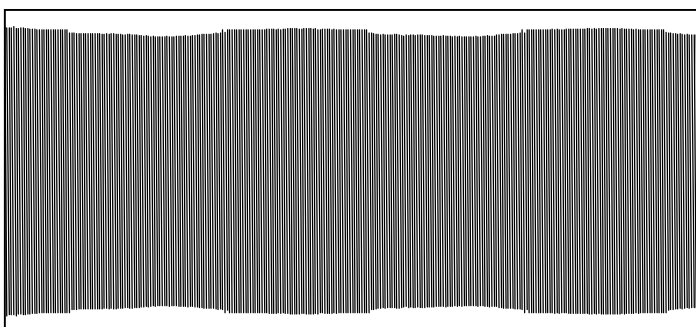
Electronic Ballast Test Report

Steady State Characterictics



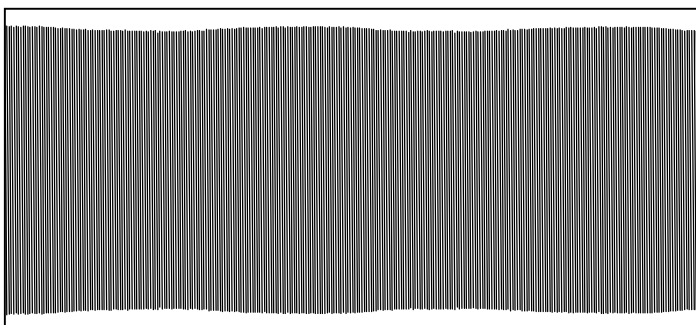
Lamp Voltage

Vlrms : 53.5 (V)
Vlp : 79.3 (V)
Vlcf : 1.48
Vlhfrms: 54.1 (V)
Vlcfhf : 1.47



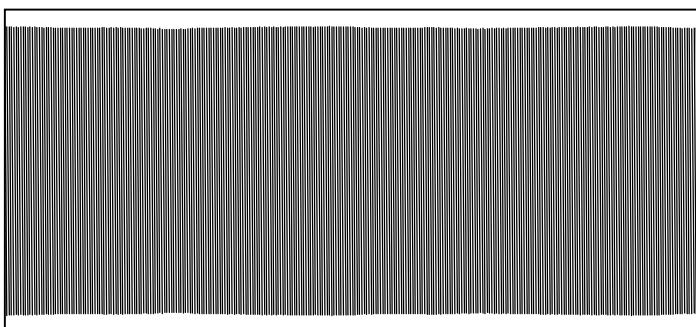
Filament Current

Afrms : 0.146(A)
Afp : 0.249(A)
Afcf : 1.71
Afrmshf: 0.151(A)
Afcfhf : 1.65



Lamp Current

Alrms : 0.942(A)
Alp : 1.394(A)
Alcf : 1.48
Aldhc : 0.00 %
Alrmshf: 0.965(A)
Alcfhf : 1.45
Pout : 49.3 (W)



Cathode Current

Akrms : 0.936(A)
Akp : 1.204(A)
Akcf : 1.29
Akrmshf: 0.945(A)
Akcfhf : 1.27
Freq : 25.39(kHz)

Test Instrument:Everfine HB-5A System

Manufacturer:Everfine

Type:M8165_2D_55W_220_MAX

Temperature:25deg

Operator: YAGI 2009-11-23

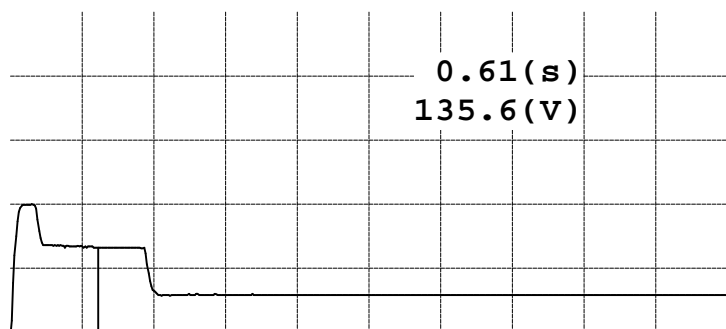
Number:1

Humidity:75%

Inspector: 2009-11-23

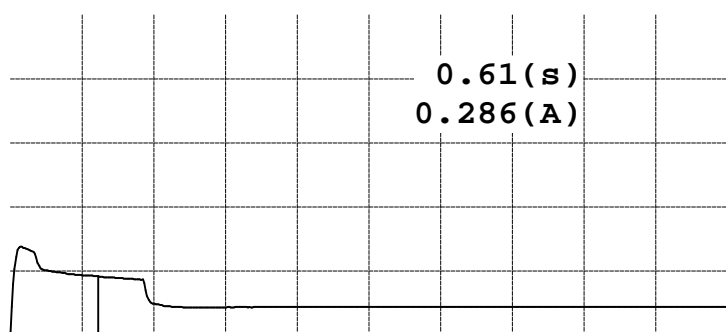
Electronic Ballast Test Report

Start Characteristics



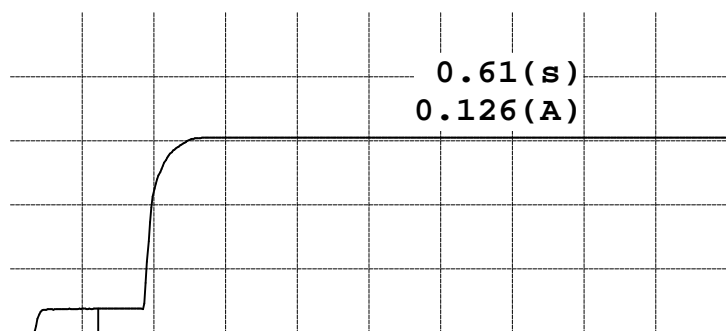
Lamp Voltage(rms)
Sensitivity: 100.00 V/Div
Peak Volt : 203.3 V

Time
Sensitivity: 500 ms/Div
Time to Vp : 0.15 s



Filament Current(rms)
Sensitivity : 0.300 A/Div
Peak Current: 0.423 A

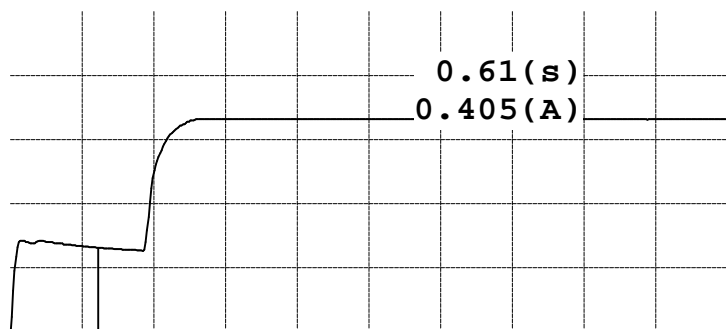
Time
Sensitivity: 500 ms/Div
Time To Ap : 0.07 s



Lamp Current(rms)
Sensitivity : 0.300 A/Div
Peak Current: 0.922 A

Time
Sensitivity: 500 ms/Div
Time to Ap : 2.06 s

Preheat time: 0.200 s



Cathode Current(rms)
Sensitivity : 0.300 A/Div
Peak Current: 1.002 A

Time
Sensitivity: 500 ms/Div
Time to Ap : 1.31 s

Test Instrument: Everfine HB-5A System

Manufacturer: Everfine

Type: M8165_2D_55W_220_MAX

Temperature: 25deg

Operator: YAGI 2009-11-23

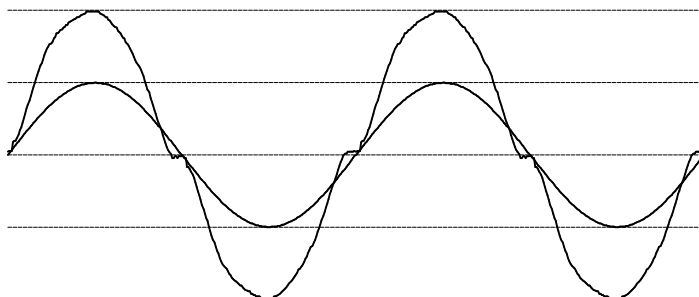
Number: 1

Humidity: 75%

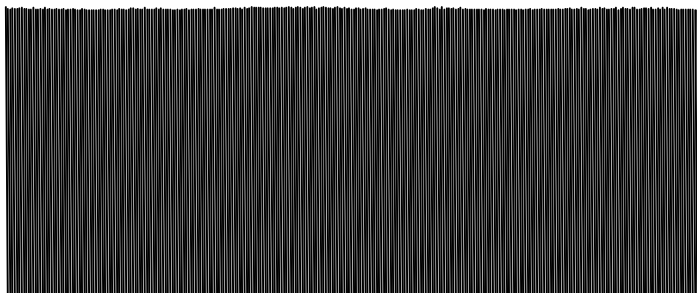
Inspector:

2009-11-23

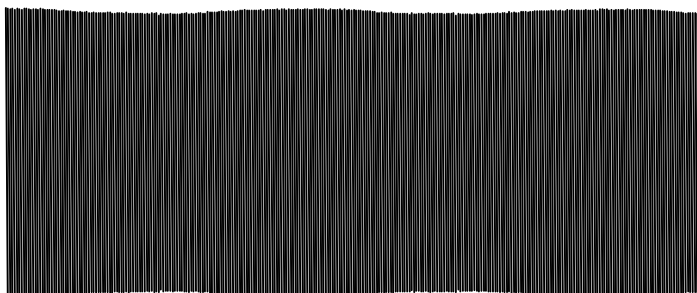
Electronic Ballast Test Report

Input & Output Characteristics Test Report
I. Input Characteristics

Vrms : 223.9(V)
Vp : 316.8(V)
Vthd : 0.3%(IEC)
Arms : 0.285(A)
Ap : 0.409(A)
Athd : 8.3%(IEC)
Power: 63.28(W)
PF : 0.992
Freq : 49.99(Hz)

II. Output Characteristics**Lamp Voltage Wave**

Vlrms: 53.5 (V)
Alrms: 0.942(A)
Afrms: 0.146(A)
Akrms: 0.936(A)
Pout : 49.3 (W)

Lamp Current Wave

Freq : 25.390(kHz)
Alcf : 1.48

Test Instrument: Everfine HB-5A System

Manufacturer: Everfine

Type: M8165_2D_55W_220_MAX

Temperature: 25deg

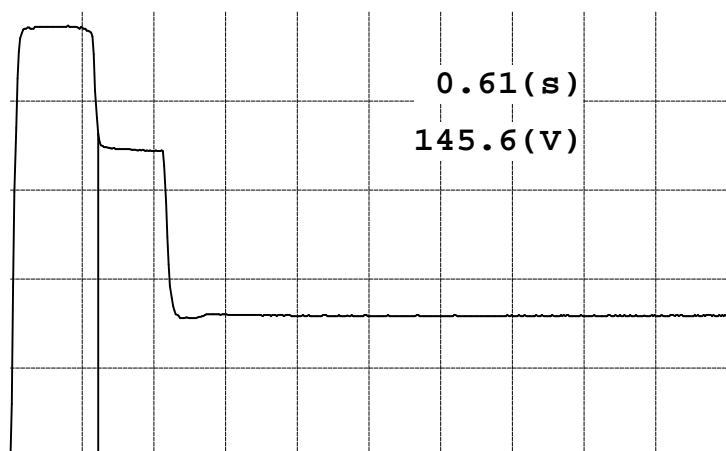
Operator: YAGI 2009-11-23

Number: 1

Humidity: 75%

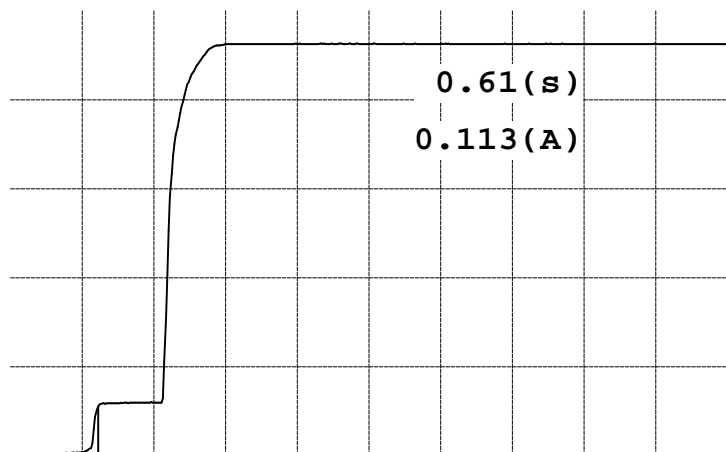
Inspector: 2009-11-23

Electronic Ballast Test Report

Preheat Energy

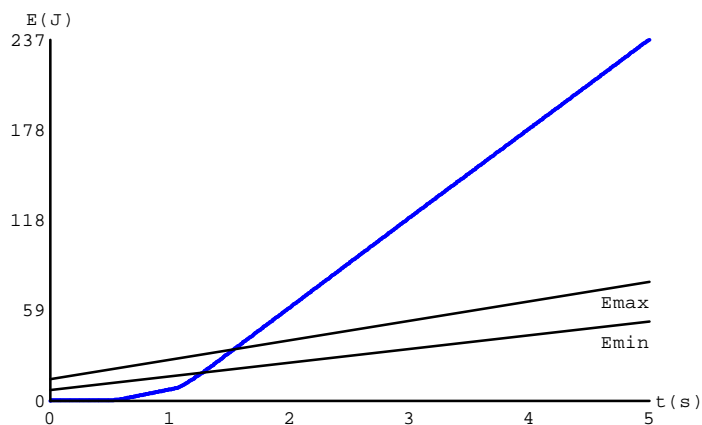
Filament Voltage(rms)
Sensitivity: 40.00 V/Div
Peak Volt : 194.1 V

Time
Sensitivity: 500 ms/Div
Time to Vp : 0.40 s



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

Time
Sensitivity: 500 ms/Div
Time To Ap : 1.98 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_220_MAX

Temperature: 25deg

Operator: YAGI 2009-11-23

Number: 1

Humidity: 75%

Inspector: 2009-11-23