



TESTING REPORT OF HIGH BAY LUMINAIRE -150W

• TESTED ITEM:

➤ HIGH BAY LUMINAIRE

• Tested by: Dr. Mohamed Rabah Amer

مركز بحوث الطاقة
كلية الهندسة - جامعة القاهرة

M Rabah

ERC - CUFE



Approved by

Rabah Amer

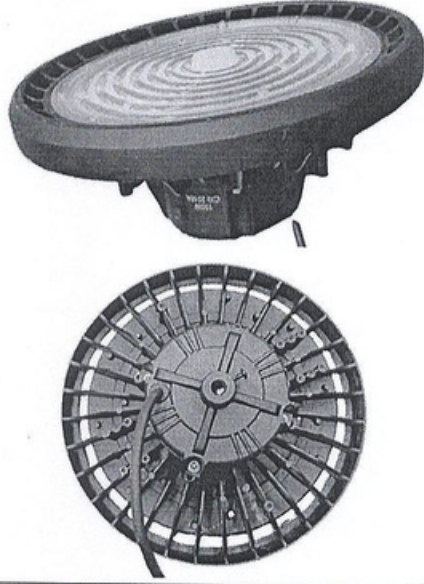
Prof. Rabah Yousif Amer
ERC Director



I. Reference standards:

- IES LM-79-19: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products.
- IEC 60598-1:2020: Luminaires - Part 1: General requirements and tests
- IEC 60598-2-2:2023: Luminaires - Part 2-2: Particular requirements - Recessed luminaires and recessed air-handling luminaires
- ANSI/UL 1598-2008: Standard for Safety of Luminaires

II. Description and Marking:

HIGH BAY LUMINAIRE -150W	
Manufacture	: EMERALD LIGHTING
• HIGH BAY LUMINAIRE • 150W • DRIVER: PHILIPS (9290 034 030) XI 150W • IP65	

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III. Photometric testing and evaluation in accordance with LM79-2019:

الاختبارات الضوئية والكهربائية

– According to IES LM-79-19

SAMPLES	A1	A2
Input Voltage (Vac)	220.8	220.6
Input Frequency (Hz)	50	50
Current (A)	0.669	0.686
Power (W)	146.4	150
Power Factor	0.991	0.991
Total Luminous Flux (lm)	20731.3	20918.3
Luminous Efficacy (lm/W)	141.6	139.5
Color Rendering Index (CRI)	83.1	82.8
CCT (correlated colour temperature)	6611K	6455K
SDCM (Standard Deviation Colour Matching)	4.5	3.7
Operating voltage range(V)-50HZ	150-310V	

- **Verdict:** To be evaluated by customer
- **Attachment:** 8 Pages

IV. Operating Voltage range

جهد التشغيل

APPLIED VOLTAGE(VAC)	Input Power(W)
100	66.42
140	132.9
150	151.1
221	145.24
264.2	144.7
313	143.7

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Handwritten signature: H. Sabah

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V. Over Temperature protection

الحماية الحرارية للكشاف

Case Temperature (°C)	Input Power(W)
30	144.5
45	142.5
60	141.3
80	139.8
90	118.1
100	76.7

➤ IMPORTANT NOTES

- The tests were conducted, results analyzed, and this report prepared by: **Dr. Mohamed Rabah Youssef Amer** (Department of Electrical Power Engineering – Faculty of Engineering – Cairo University).
- This report was prepared based on the tests carried out on samples submitted to the Energy Research Center – Faculty of Engineering – Cairo University, under the responsibility of **EMERALD LIGHTING ENERGY SOLUTIONS**.
- The submitted samples are non-returnable.
- The test results are valid only under the operating and environmental conditions specified in this report. Any change in these conditions renders the results invalid.
- This report may not be reissued in part or whole without prior authorization from the Energy Research Center – Faculty of Engineering – Cairo University.
- Any page of the report that does not bear an official signature and stamp shall be deemed invalid and shall not be considered legally or technically binding..
- The tested samples will be preserved in their current state for a period of two months from the report issuance date, unless they are subjected to destructive testing or additional testing is requested by the client.
- Any inquiries regarding this report or its results should be directed to the Energy Research Center within the sample retention period.

EnergyLightsource test report

Product Remark

Type:LED HIGH BAY-150W

TempIn:24.1°C

Operator:DR.MOHAMED RABAH

Factory:EMERALD LIGHTING

Temp:23.8°C

Date:2026-01-19

Humidity:49%

CIE Color Parameter

Chromaticity Coordinate: x=0.3108 y=0.3288 u=0.1966 v=0.3119 duv=0.0040

CCT: Tc= 6611K

Dominant wave: 490.2nm

Purity: 7.9%

Peak Wave: 452nm

Half Width: 24.7nm

RatioR=14.5% G=81.5% B=4.0%

Rending Index: Ra= 83.1

R1 =81

R2 =89

R3 =93

R4 =80

R5 =81

R6 =84

R7 =88

R8 =69

R9 =6

R10=74

R11=79

R12=53

R13=84

R14=97

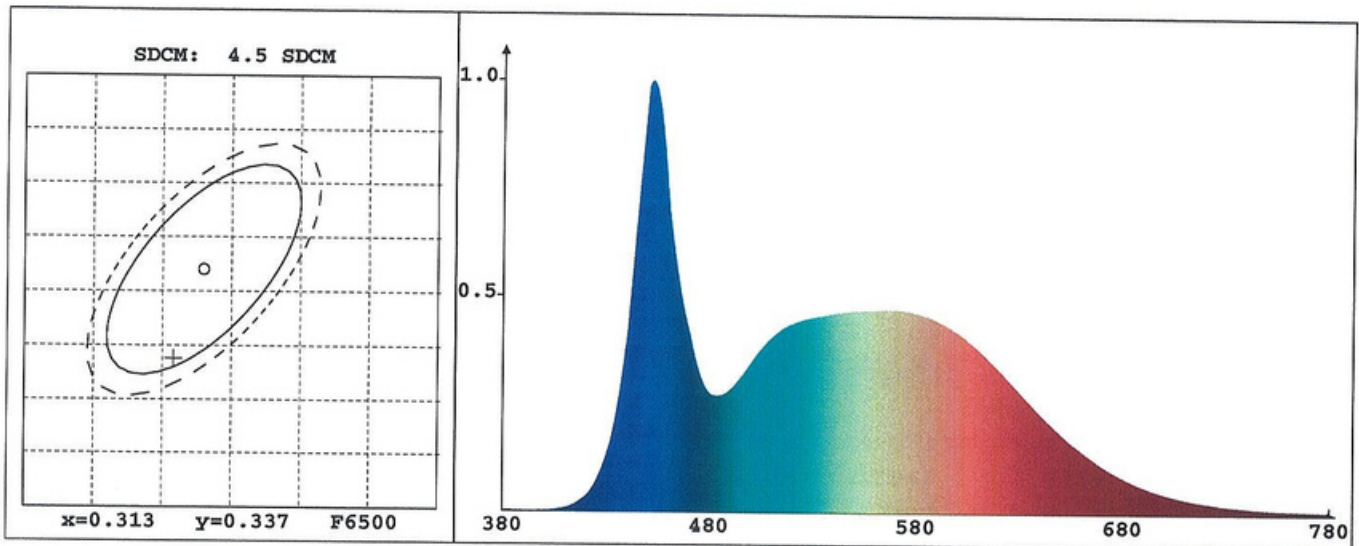


Photo Parameter

Flux: 20731.3 lm

Efficacy: 141.6 lm/W

Lumi.Pow.: 69.731W

Electrical Parameter

Voltage:220.8V

Current:0.669A

Power:146.4W

PF:0.991

Instrument Status

Range: 380nm-780nm

Main: 1

Reference: 2

Interval: 5nm

Id: 18

REF: 9630

PMT HV: -329V

Ip: 23364

#: -0.737%

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EnergyLightsource test report

Product Remark

Type:LED HIGH BAY-150W-A2

TempIn:24.2°C

Operator:DR.MOHAMED RABAH

Factory:EMERALD LIGHTING

Temp:23.5°C

Date:2026-01-19

Humidity:49%

CIE Color Parameter

Chromaticity Coordinate: $x=0.3133$ $y=0.3317$ $u=0.1972$ $v=0.3132$ $duv=0.0043$

CCT: $T_c=6455K$

Dominant wave: 491.8nm

Purity: 6.9%

Peak Wave: 450nm

Half Width: 23.7nm

RatioR=14.7% G=81.6% B=3.8%

Rending Index: $R_a=82.8$

R1 =80

R2 =89

R3 =93

R4 =80

R5 =80

R6 =83

R7 =88

R8 =68

R9 =4

R10=73

R11=79

R12=53

R13=83

R14=97

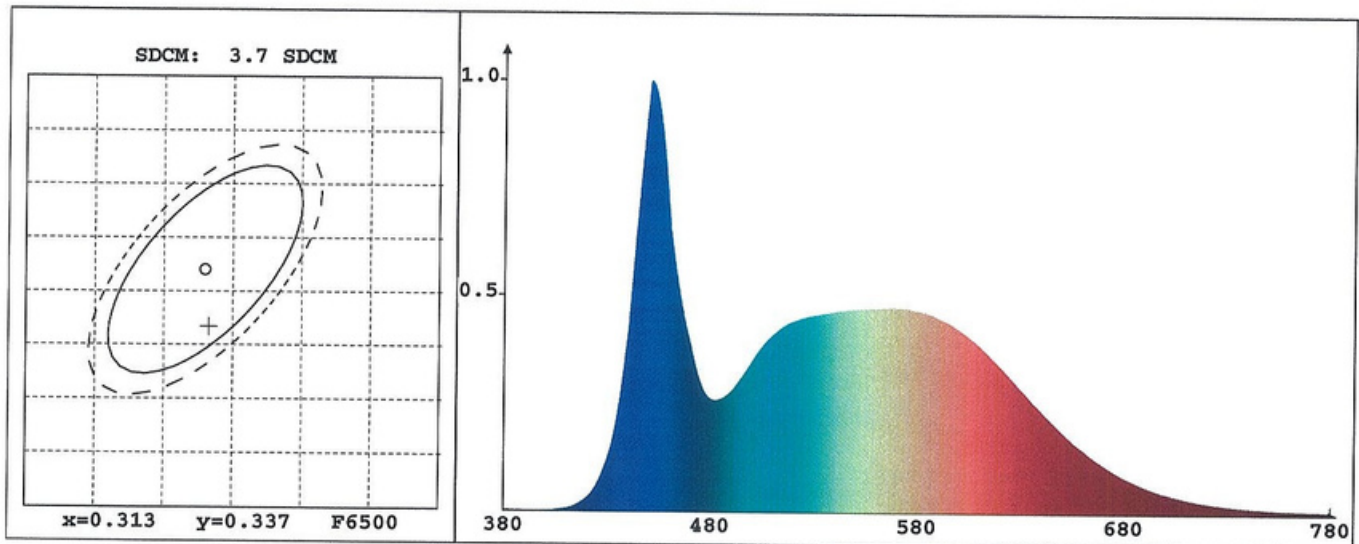


Photo Parameter

Flux: 20918.3 lm

Efficacy: 139.5 lm/W

Lumi.Pow.: 69.801W

Electrical Parameter

Voltage:220.6V

Current:0.686A

Power:150.0W

PF:0.991

Instrument Status

Range: 380nm-780nm

Main: 1

Reference: 2

Interval: 5nm

Id: 18

REF: 9951

PMT HV: -328V

Ip: 24498

#: -0.804%

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LED Power Driver

Input Properties Test Report

Product Mark

Product Type: LED HIGH BAY-150W

Temperature: 24°C

Operator: Dr. Mohamed Rabah

Manufacturer: EMERALD LIGHTING

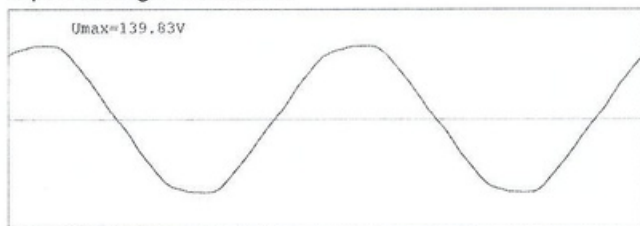
Humidity: 37%

Test Time: 2026-01-21

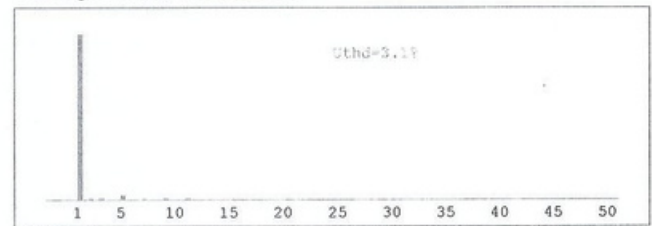
Electrical Parameter

Input Voltage	100.35V	Input NF Current	663.2mA	Input WF Current	663.2mA	Input Frequency	49.99Hz
Peak Voltage	139.83V	Peak Current	939.5mA	CFU	1.39	CFI	1.42
Input Power	66.42W	Power Factor	0.998	WF Power Factor	0.998		
Begin Angle	9.37°	Peak Angle	98.05°	End Angle	164.15°		

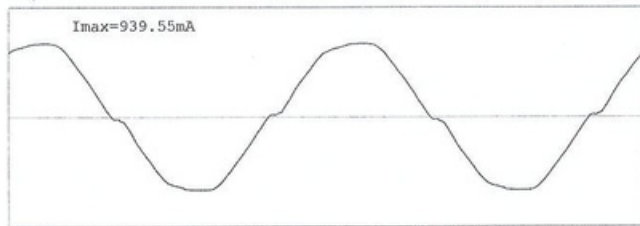
Input Voltage Waveform



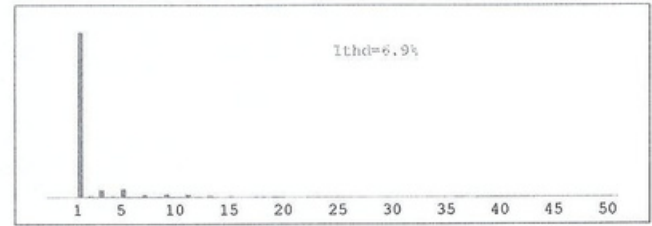
Voltage Harmonic Wave



Input Current Waveform



Current Harmonic Wave



Harmonic Data List

Number	Voltage Harmonic	Current Harmonic	Number	Voltage Harmonic	Current Harmonic
1	100.00%	100.00%	26	0.03%	0.01%
2	0.53%	0.52%	27	0.05%	0.02%
3	0.97%	4.31%	28	0.03%	0.02%
4	0.26%	0.35%	29	0.07%	0.05%
5	2.61%	4.69%	30	0.03%	0.04%
6	0.10%	0.16%	31	0.03%	0.09%
7	0.51%	1.14%	32	0.04%	0.02%
8	0.07%	0.07%	33	0.00%	0.05%
9	0.55%	1.47%	34	0.01%	0.02%
10	0.08%	0.16%	35	0.04%	0.06%
11	0.64%	1.30%	36	0.04%	0.06%
12	0.06%	0.12%	37	0.01%	0.10%
13	0.33%	0.75%	38	0.04%	0.02%
14	0.10%	0.09%	39	0.03%	0.07%
15	0.09%	0.33%	40	0.03%	0.03%
16	0.08%	0.01%	41	0.04%	0.06%
17	0.09%	0.26%	42	0.04%	0.06%
18	0.02%	0.08%	43	0.02%	0.10%
19	0.04%	0.19%	44	0.03%	0.03%
20	0.06%	0.04%	45	0.04%	0.07%
21	0.01%	0.14%	46	0.01%	0.02%
22	0.07%	0.03%	47	0.02%	0.05%
23	0.10%	0.03%	48	0.03%	0.03%
24	0.01%	0.05%	49	0.02%	0.05%
25	0.04%	0.15%	50	0.02%	0.04%

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LED Power Driver

Input Properties Test Report

Product Mark

Product Type: LED HIGH BAY-150W

Temperature: 24°C

Operator: Dr. Mohamed Rabah

Manufacturer: EMERALD LIGHTING

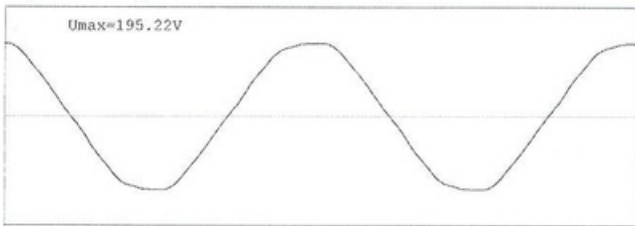
Humidity: 37%

Test Time: 2026-01-21

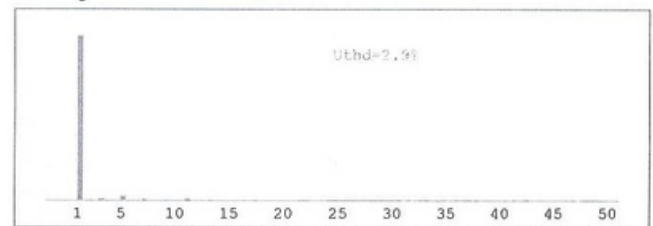
Electrical Parameter

Input Voltage	140.66V	Input NF Current	946.2mA	Input WF Current	946.7mA	Input Frequency	50.00Hz
Peak Voltage	195.22V	Peak Current	1332.2mA	CFU	1.39	CFI	1.41
Input Power	132.87W	Power Factor	0.998	WF Power Factor	0.998		
Begin Angle	8.27°	Peak Angle	99.62°	End Angle	166.29°		

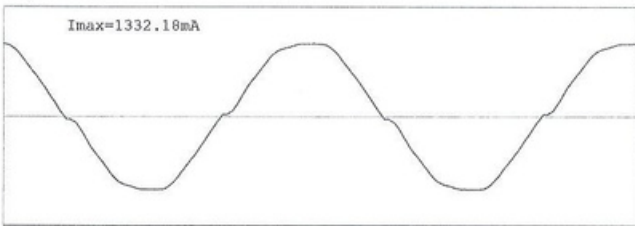
Input Voltage Waveform



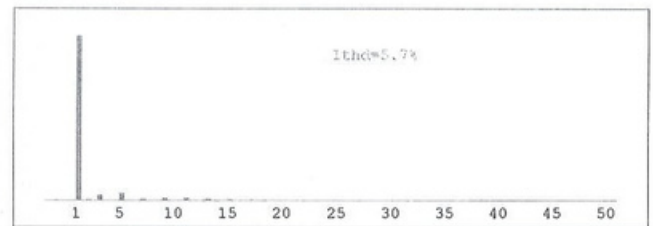
Voltage Harmonic Wave



Input Current Waveform



Current Harmonic Wave



Harmonic Data List

Number	Voltage Harmonic	Current Harmonic	Number	Voltage Harmonic	Current Harmonic
1	100.00%	100.00%	26	0.00%	0.03%
2	0.45%	0.45%	27	0.02%	0.07%
3	0.69%	3.15%	28	0.02%	0.03%
4	0.19%	0.29%	29	0.02%	0.05%
5	2.48%	4.17%	30	0.01%	0.02%
6	0.02%	0.08%	31	0.01%	0.08%
7	0.66%	0.79%	32	0.01%	0.02%
8	0.03%	0.09%	33	0.03%	0.03%
9	0.47%	1.27%	34	0.01%	0.02%
10	0.10%	0.16%	35	0.02%	0.05%
11	0.69%	1.25%	36	0.00%	0.02%
12	0.02%	0.09%	37	0.02%	0.05%
13	0.39%	0.72%	38	0.02%	0.02%
14	0.05%	0.07%	39	0.02%	0.07%
15	0.15%	0.31%	40	0.01%	0.03%
16	0.01%	0.05%	41	0.01%	0.06%
17	0.06%	0.30%	42	0.02%	0.01%
18	0.01%	0.05%	43	0.01%	0.05%
19	0.03%	0.19%	44	0.02%	0.03%
20	0.04%	0.03%	45	0.03%	0.05%
21	0.07%	0.15%	46	0.03%	0.02%
22	0.02%	0.03%	47	0.01%	0.05%
23	0.03%	0.10%	48	0.01%	0.03%
24	0.02%	0.03%	49	0.01%	0.06%
25	0.05%	0.13%	50	0.01%	0.04%

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Dr. Mohamed Rabah

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LED Power Driver

Input Properties Test Report

Product Mark

Product Type: LED HIGH BAY-150W

Temperature: 24°C

Operator: Dr. Mohamed Rabah

Manufacturer: EMERALD LIGHTING

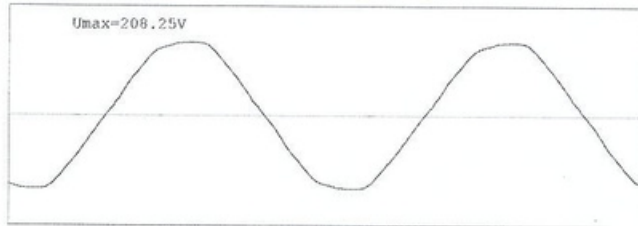
Humidity: 37%

Test Time: 2026-01-21

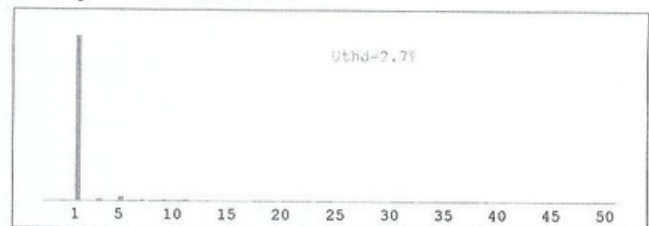
Electrical Parameter

Input Voltage	149.80V	Input NF Current	1010.2mA	Input WF Current	1010.5mA	Input Frequency	50.03Hz
Peak Voltage	208.25V	Peak Current	1421.0mA	CFU	1.39	CFI	1.40
Input Power	151.08W	Power Factor	0.998	WF Power Factor	0.998		
Begin Angle	8.00°	Peak Angle	98.64°	End Angle	164.11°		

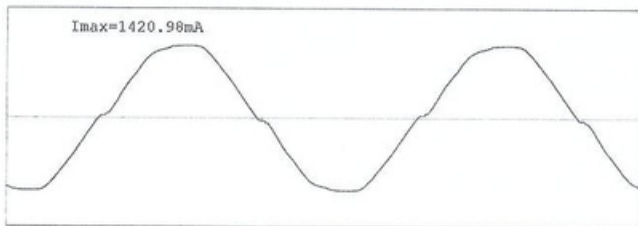
Input Voltage Waveform



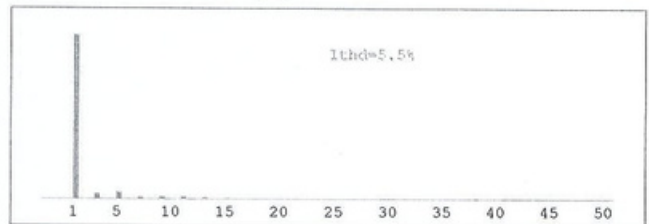
Voltage Harmonic Wave



Input Current Waveform



Current Harmonic Wave



Harmonic Data List

Number	Voltage Harmonic	Current Harmonic	Number	Voltage Harmonic	Current Harmonic
1	100.00%	100.00%	26	0.04%	0.03%
2	0.04%	0.02%	27	0.05%	0.06%
3	0.75%	3.13%	28	0.04%	0.02%
4	0.04%	0.02%	29	0.04%	0.06%
5	2.37%	3.98%	30	0.01%	0.02%
6	0.04%	0.01%	31	0.08%	0.10%
7	0.65%	0.88%	32	0.04%	0.02%
8	0.04%	0.01%	33	0.04%	0.01%
9	0.50%	1.27%	34	0.05%	0.01%
10	0.05%	0.02%	35	0.02%	0.04%
11	0.65%	1.16%	36	0.05%	0.01%
12	0.03%	0.01%	37	0.01%	0.05%
13	0.41%	0.78%	38	0.08%	0.01%
14	0.04%	0.02%	39	0.01%	0.06%
15	0.14%	0.30%	40	0.03%	0.01%
16	0.02%	0.02%	41	0.03%	0.05%
17	0.07%	0.29%	42	0.04%	0.00%
18	0.05%	0.00%	43	0.04%	0.05%
19	0.04%	0.20%	44	0.02%	0.01%
20	0.05%	0.01%	45	0.03%	0.06%
21	0.07%	0.18%	46	0.02%	0.01%
22	0.04%	0.01%	47	0.05%	0.06%
23	0.05%	0.12%	48	0.06%	0.00%
24	0.08%	0.02%	49	0.05%	0.06%
25	0.04%	0.13%	50	0.05%	0.02%

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LED Power Driver

Input Properties Test Report

Product Mark

Product Type: LED HIGH BAY-150W

Temperature: 24°C

Operator: Dr. Mohamed Rabah

Manufacturer: EMERALD LIGHTING

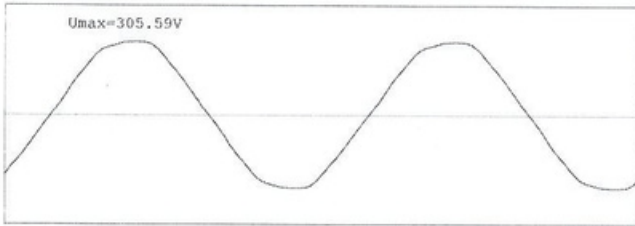
Humidity: 37%

Test Time: 2026-01-21

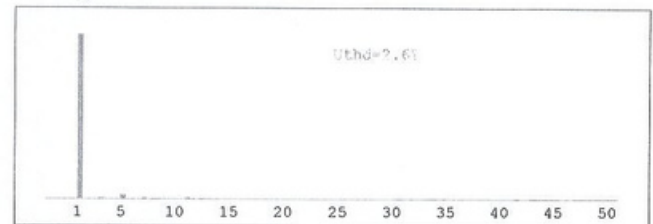
Electrical Parameter

Input Voltage	220.64V	Input NF Current	665.1mA	Input WF Current	670.2mA	Input Frequency	50.02Hz
Peak Voltage	305.59V	Peak Current	950.6mA	CFU	1.39	CFI	1.43
Input Power	145.24W	Power Factor	0.990	WF Power Factor	0.982		
Begin Angle	4.08°	Peak Angle	-52.52°	End Angle	161.31°		

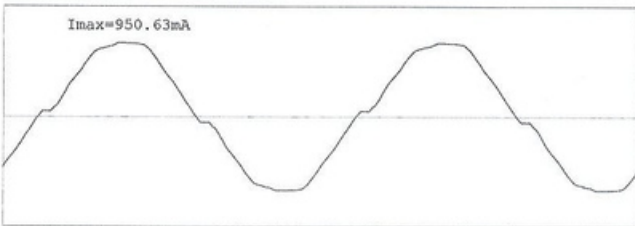
Input Voltage Waveform



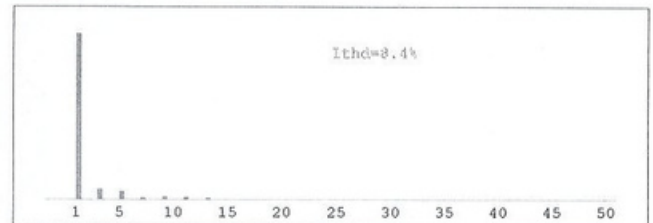
Voltage Harmonic Wave



Input Current Waveform



Current Harmonic Wave



Harmonic Data List

Number	Voltage Harmonic	Current Harmonic	Number	Voltage Harmonic	Current Harmonic
1	100.00%	100.00%	26	0.02%	0.02%
2	0.05%	0.04%	27	0.02%	0.07%
3	0.49%	6.19%	28	0.01%	0.03%
4	0.05%	0.04%	29	0.03%	0.12%
5	2.32%	4.86%	30	0.02%	0.04%
6	0.01%	0.01%	31	0.01%	0.15%
7	0.68%	1.36%	32	0.02%	0.01%
8	0.02%	0.01%	33	0.02%	0.01%
9	0.46%	1.70%	34	0.04%	0.03%
10	0.03%	0.02%	35	0.01%	0.09%
11	0.63%	1.52%	36	0.02%	0.02%
12	0.03%	0.03%	37	0.02%	0.04%
13	0.35%	0.94%	38	0.02%	0.01%
14	0.02%	0.02%	39	0.03%	0.06%
15	0.12%	0.28%	40	0.01%	0.01%
16	0.02%	0.01%	41	0.03%	0.06%
17	0.04%	0.29%	42	0.04%	0.02%
18	0.02%	0.02%	43	0.03%	0.04%
19	0.03%	0.20%	44	0.02%	0.01%
20	0.02%	0.00%	45	0.03%	0.08%
21	0.06%	0.21%	46	0.02%	0.02%
22	0.02%	0.03%	47	0.03%	0.06%
23	0.06%	0.08%	48	0.03%	0.00%
24	0.03%	0.04%	49	0.04%	0.07%
25	0.04%	0.24%	50	0.02%	0.02%

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Dr. Mohamed Rabah

ERC - CUFE

LED Power Driver

Input Properties Test Report

Product Mark

Product Type: LED HIGH BAY-150W

Temperature: 24°C

Operator: Dr. Mohamed Rabah

Manufacturer: EMERALD LIGHTING

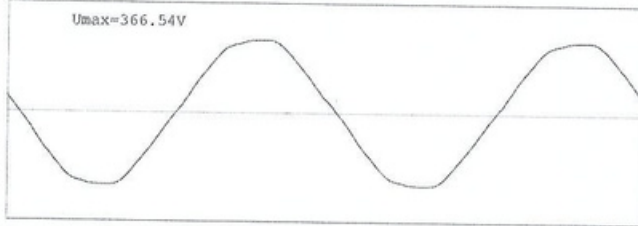
Humidity: 37%

Test Time: 2026-01-21

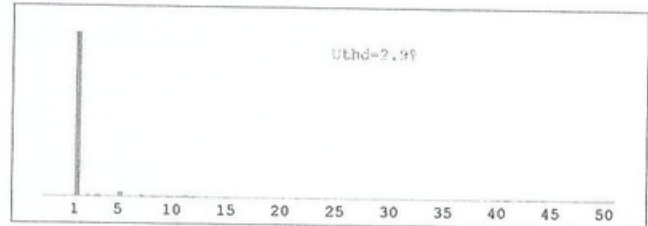
Electrical Parameter

Input Voltage	264.22V	Input NF Current	559.5mA	Input WF Current	560.8mA	Input Frequency	49.97Hz
Peak Voltage	366.54V	Peak Current	819.8mA	CFU	1.39	CFI	1.46
Input Power	144.68W	Power Factor	0.979	WF Power Factor	0.976		
Begin Angle	-6.19°	Peak Angle	78.59°	End Angle	178.57°		

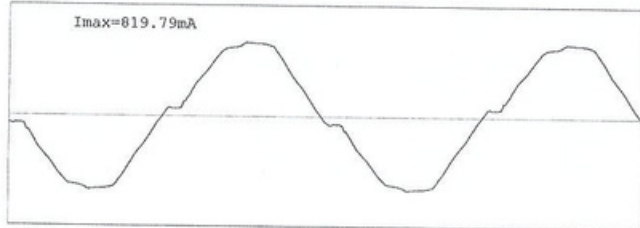
Input Voltage Waveform



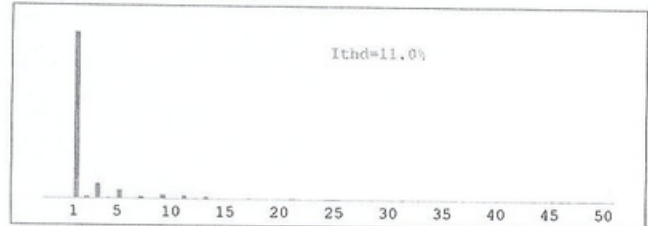
Voltage Harmonic Wave



Input Current Waveform



Current Harmonic Wave



Harmonic Data List

Number	Voltage Harmonic	Current Harmonic	Number	Voltage Harmonic	Current Harmonic
1	100.00%	100.00%	26	0.03%	0.11%
2	0.75%	0.91%	27	0.02%	0.09%
3	0.65%	8.97%	28	0.04%	0.05%
4	0.35%	0.31%	29	0.01%	0.03%
5	2.51%	5.28%	30	0.04%	0.07%
6	0.14%	0.10%	31	0.02%	0.11%
7	0.58%	1.40%	32	0.04%	0.03%
8	0.15%	0.17%	33	0.03%	0.17%
9	0.42%	2.07%	34	0.04%	0.01%
10	0.14%	0.06%	35	0.04%	0.11%
11	0.51%	1.88%	36	0.02%	0.01%
12	0.15%	0.14%	37	0.06%	0.14%
13	0.35%	0.88%	38	0.01%	0.02%
14	0.09%	0.01%	39	0.05%	0.15%
15	0.12%	0.24%	40	0.01%	0.08%
16	0.09%	0.02%	41	0.03%	0.11%
17	0.13%	0.36%	42	0.03%	0.06%
18	0.07%	0.07%	43	0.03%	0.10%
19	0.05%	0.23%	44	0.04%	0.04%
20	0.04%	0.04%	45	0.02%	0.15%
21	0.04%	0.45%	46	0.05%	0.09%
22	0.05%	0.09%	47	0.01%	0.12%
23	0.05%	0.04%	48	0.04%	0.05%
24	0.04%	0.05%	49	0.03%	0.13%
25	0.06%	0.24%	50	0.04%	0.08%

مركز بحوث الطاقة
كلية الهندسة جامعة القاهرة

Dr. Rabah

ERC - CUFÉ

LED Power Driver

Input Properties Test Report

Product Mark

Product Type: LED HIGH BAY-150W

Temperature: 24°C

Operator: Dr. Mohamed Rabah

Manufacturer: EMERALD LIGHTING

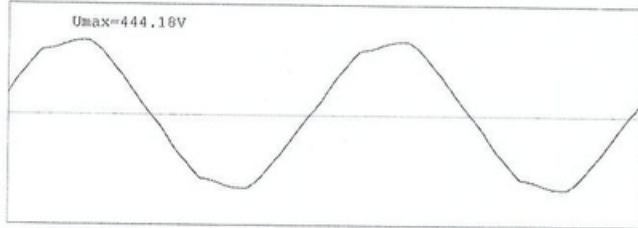
Humidity: 37%

Test Time: 2026-01-21

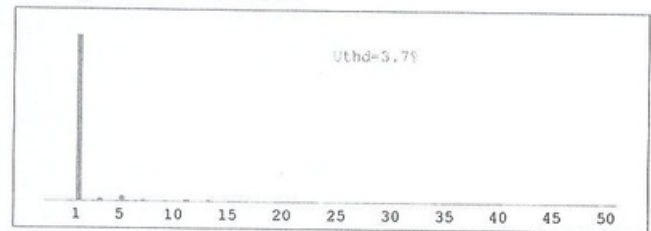
Electrical Parameter

Input Voltage	313.46V	Input NF Current	740.6mA	Input WF Current	740.9mA	Input Frequency	50.01Hz
Peak Voltage	444.18V	Peak Current	2068.5mA	CFU	1.42	CFI	2.77
Input Power	143.70W	Power Factor	0.619	WF Power Factor	0.619		
Begin Angle	59.44°	Peak Angle	82.71°	End Angle	103.71°		

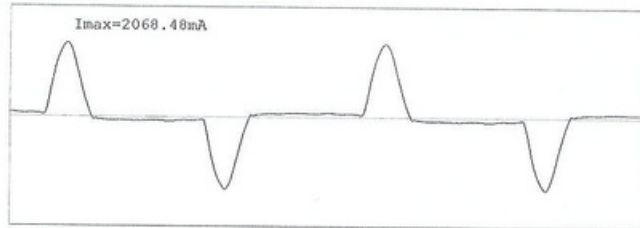
Input Voltage Waveform



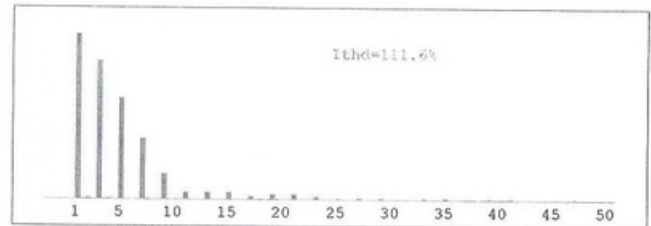
Voltage Harmonic Wave



Input Current Waveform



Current Harmonic Wave



Harmonic Data List

Number	Voltage Harmonic	Current Harmonic	Number	Voltage Harmonic	Current Harmonic
1	100.00%	100.00%	26	0.01%	0.11%
2	0.01%	0.53%	27	0.09%	0.87%
3	1.46%	83.93%	28	0.01%	0.03%
4	0.03%	0.33%	29	0.05%	0.58%
5	3.03%	61.22%	30	0.02%	0.03%
6	0.04%	0.17%	31	0.04%	0.13%
7	1.06%	36.75%	32	0.01%	0.12%
8	0.01%	0.20%	33	0.04%	0.64%
9	0.36%	15.16%	34	0.00%	0.01%
10	0.01%	0.17%	35	0.03%	0.71%
11	0.73%	4.10%	36	0.02%	0.05%
12	0.03%	0.13%	37	0.02%	0.20%
13	0.50%	4.10%	38	0.01%	0.10%
14	0.03%	0.10%	39	0.03%	0.35%
15	0.24%	4.06%	40	0.01%	0.09%
16	0.02%	0.20%	41	0.03%	0.48%
17	0.05%	2.02%	42	0.00%	0.03%
18	0.01%	0.16%	43	0.02%	0.20%
19	0.12%	2.86%	44	0.01%	0.07%
20	0.02%	0.09%	45	0.03%	0.16%
21	0.14%	2.85%	46	0.04%	0.06%
22	0.01%	0.12%	47	0.04%	0.37%
23	0.04%	1.62%	48	0.01%	0.06%
24	0.01%	0.11%	49	0.03%	0.26%
25	0.06%	0.45%	50	0.02%	0.08%

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